

# PHILADELPHIA MEDICAL TIMES.

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## ORIGINAL COMMUNICATIONS.

### AN ANALYSIS OF THREE HUNDRED AND SIXTEEN CASES IN WHICH FOREIGN BODIES WERE LODGED IN THE BRAIN.

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SIR BENJAMIN BRODIE, in analyzing ten cases of musket-ball lodged in the brain, says, "In two cases of them the ball was extracted, and one patient recovered, while the other died. In the remaining eight cases the ball was allowed to remain; two of these patients died, while six recovered. Of the latter, one died several weeks afterwards, of inflammation of the brain, induced by excessive drinking, and another died in the course of the following year, from sunstroke."\* In the following collection of cases, more than thirty times the number analyzed by Brodie, the results are as follows: of the three hundred and sixteen cases, one hundred and sixty recovered, while one hundred and fifty-six died.

In one hundred and six cases the foreign body was removed, death following in thirty-four cases, recovery in seventy-two cases.

In two hundred and ten cases no attempt was made to remove the foreign body, death following in one hundred and twenty-two cases, recovery in eighty-eight cases. It should be here stated that some ten patients who recovered sufficiently to attend to their regular occupations, but ultimately died at periods varying from three to fifteen years from the effects of their injuries, have been classed as having recovered.

Considering the severity of the injury, the proportion of recoveries is large, but on examination of the cases it will be observed that many of the recoveries were not complete, the patients afterwards suffering from epilepsy, vertigo, impairment of mind, incapacity for physical exertion, paralysis, loss of sight and hearing. In one hundred and eleven of the cases of recovery the above-named symptoms were

wanting, while they were present in forty-nine cases.

In the one hundred and eleven cases that recovered without bad symptoms, the foreign body was removed in fifty-six cases and allowed to remain in forty-five cases. The question of interference for removal of foreign bodies is one which has caused much discussion, but on which I think authorities are now generally agreed. In the following collection of cases the results of its removal were not only most satisfactory as regards recovery but also as regards the completeness of the recovery. There can be no doubt that the presence of the foreign body increases the gravity of the injury, and that when its position can be clearly located, and when its removal is not accompanied with too great a destruction of tissue, it should be attempted. The difficulty of locating the foreign body is seen to be great, for when it has once passed out of sight the surgeon has no means of discovering its position, except by the probe. Extreme care should be exercised in passing a probe along the track of a foreign body in a wound of this nature, as little force is required to cause the probe to pass through the unresisting brain structure in a course different from that taken by the vulnerating body, and the surgeon may add other wounds to an already most serious injury. On the other hand, where the body cannot be accurately located, all attempts to find it by frequent probing should be desisted from, for, as has been shown, a large number of cases have recovered where it has not been removed, and there is a possibility of its becoming encysted, and of recovery taking place in this way, or of life at least being prolonged.

I think that Prof. Thomas Longmore, in his article on trephining in injuries of the head, expresses the opinion of the best surgeons of the present day. He says, "If the site of lodgment of the projectile is obvious, it should be removed with as little disturbance as possible, but trephining for its extraction when the place of its lodgment is not definitely known, but where the projectile is only supposed by inference to be lodged in a particular spot beneath the cranium, is an unwarrantable operation."† The presence of the foreign

\* Works of Sir Benjamin Brodie, vol. iii. p. 82.

† Holmes's System of Surgery, vol. II. p. 181.

body in the brain in many cases excites inflammatory action, which may be either rapid or slow in its progress, sometimes destroying large amounts of brain-tissue before the case ends fatally. That cerebral abscess is a frequent cause of death is clearly shown by the fact that it was present in at least fifty-three of the fatal cases where post-mortem examinations were made; in many other cases the examination was made solely with reference to the location of the foreign body, and the condition of the surrounding tissues is not stated.

Apoplexy is also shown to be a cause of death in these injuries, but much less frequently than abscess. Pressure of the foreign body on the venous branches, interfering with the return of blood, causing effusion into the cavities of the brain, and this effusion by its pressure interfering with the function of the nerves which have their origin from the base of the brain, is also noted as a cause of death. Convulsions and coma, also resulting from this interference with the circulation of the blood in the brain, are frequently noted. A tendency to coma, it might be here stated, as in all head injuries, is a most unfavorable symptom, nearly every one of these cases in which it was marked proving fatal.

The presence of the foreign body in the brain seems to predispose to inflammatory action; in some cases of recovery where the foreign body remained in the brain, the cases progressed favorably until some cerebral excitement was experienced; five cases are recorded where death took place suddenly after excessive drinking, in one case during the excitement of a game of cards, in another after a slight injury of the head.

Seven cases were complicated with hernia cerebri; three of these proved fatal, four ending in recovery.

In quite a number of cases the foreign body remained in the brain for some time without causing any unfavorable symptoms, when suddenly cerebral symptoms were developed and death quickly followed. I think that the experiments of M. Flourens will help to explain these cases. He introduced leaden bullets into the brains of rabbits and dogs. The balls were placed on different parts of the upper region of the encephalon and on the lobes of the cerebellum. The balls left to the action of their own weight penetrated by

degrees the substance of the brain, and ultimately stopped at the base of the cranium, the passage made by the balls healing after them.\* This fact that bodies were found to change their position may account for the sudden deaths in cases where their presence had previously occasioned little trouble. With regard to the fatality of injuries of different parts of the brain, authorities differ. Guthrie says that an injury of apparently equal extent is more dangerous in the forehead than on the side or middle of the head, and much less so on the back part than on the side.†

Brodie, on the other hand, says, "I have not been able to discover in the works that I have consulted a single instance of recovery from a wound of the posterior lobe of the cerebrum, cerebellum, or medulla oblongata, and in the great majority of cases where a cure has taken place the injury has been confined to the frontal bone and the parts of the brain which are covered and defended by it.‡

Brodie's opinion that recovery is more apt to follow wounds of the anterior portion of the brain is strengthened by examination of the cases where the foreign body penetrated the frontal bone, of which there were one hundred and thirty-two, followed by death in fifty-eight cases and recovery in seventy-four cases.

There were fifty-eight cases of penetration of the parietal bones, followed by twenty-seven deaths and thirty-one recoveries.

The occipital bone was penetrated in twenty-three cases, with sixteen deaths and seven recoveries.

The temporal bones were penetrated in thirty-one cases, with twelve deaths and nineteen recoveries.

Wounds of the orbit were by far the most fatal, eighteen in number, followed by seventeen deaths and one recovery, although the persons were in many cases unconscious of the injury, and the unfavorable symptoms developed suddenly.

The sphenoid bone was penetrated in five cases, with four deaths and one recovery.

In forty-nine cases where the wound of entrance was not definitely stated, there were twenty-two deaths and twenty-seven recoveries.

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\* Dublin Med. Press, July to December, 1862.

† Guthrie's Comments on Surgery, p. 299.

‡ Works of Sir Benjamin Brodie, vol. iii. p. 83.

| Case. | Reporter.         | Reference.                                    | Foreign body.         | Re-<br>moved. | Time the foreign<br>body remained. | Result.  |
|-------|-------------------|---|-----------------------|---------------|------------------------------------|--|
| 1     | Anderson, Geo.    | Dublin Jour. Med. Sciences, vol. 2.           | Ferrule of cane.      | ...           | 2 days.                            | Death.   |
| 2     | Anders.           | Mem. Acad. Surgery, p. 46; Syden. Soc. Trans. | Pistol-ball.          | ...           | Many years.                        | Recovery; death from apoplexy after many years.          |
| 3     | Andrews, T. H.    | Report, 1868.                                 | Pistol-ball.          | ...           | Indefinitely.                      | Recovery; under observation four and a half months.      |
| 4     | Ansell, A.        | Surg. Hist. Rebellion, p. 245.                | Conoidal ball.        | R             | 19 days.                           | Death; cerebral abscess.                                 |
| 5     | Appley, W. L.     | Surg. Hist. Rebellion, 1870.                  | Splinter of wood.     | R             | 20 years.                          | Recovery.  |
| 6     | Arcaus.           | Andrews, loc. cit.                            | Ball.                 | R             | 10 years.                          | Recovery.  |
| 7     | Arnott, F. S.     | Bombay Med. and Phys. Jour., 1847-50.         | Musket-ball.          | ...           | 1 month.                           | Death.   |
| 8     | Arthur, F. P.     | Surg. Hist. Rebellion, p. 202.                | Conoidal ball.        | ...           | 4 days.                            | Death.   |
| 9     | Aschurst, J., Jr. | Amer. Jour. Med. Sci., July, 1866.            | Musket-ball.          | ...           | 36 days.                           | Death.   |
| 10    | Bacile.           | Andrews, loc. cit.                            | Ball.                 | ...           | 30 years.                          | Recovery; death from natural causes.                     |
| 11    | Bacron.           | Mem. Acad. Surgery, p. 45.                    | Musket-ball.          | ...           | 1 year.                            | Recovery; death from sunstroke one year after injury.    |
| 12    | Baker, M.         | 12 Drain. Obs. in Surgery, 1793.              | 3 shot, 3 slug.       | R             | 33 days.                           | Recovery.  |
| 13    | Baker, W.         | German Hospital, Philadelphia.                | Knife-blade, 5½ in.   | R             | 24 hours.                          | Death; cerebral abscess.                                 |
| 14    | Baldwin, R. F.    | Richmond and Louisville Jour., 1874.          | Pistol-ball.          | ...           | Indefinitely.                      | Recovery; under observation thirteen years.              |
| 15    | Barthol.          | Surg. Hist. Rebellion, p. 204.                | Conoidal ball.        | ...           | 6 days.                            | Death.   |
| 16    | Bax.              | Andrews, loc. cit., p. 304.                   | Ball.                 | ...           | 7 years.                           | Recovery; death from cerebral abscess after seven years. |
| 17    | Baxter, J. H.     | Surg. Hist. Rebellion, p. 274.                | Conoidal ball.        | R             | 1 day.                             | Death.   |
| 18    | Beaumont, W.      | Hoston Med. and Surg. Jour., 1862.            | Part of rocket-shaft. | R             | Some time.                         | Recovery.  |
| 19    | Bell, J.          | Surg. Hist. Rebellion, p. 203.                | Musket-ball.          | R             | 4 days.                            | Death.   |
| 20    | Beasley, E.       | Surg. Hist. Rebellion, p. 320.                | Pistol-ball.          | ...           | 5 days.                            | Death.   |
| 21    | Bid.              | Surg. Hist. Rebellion, p. 206.                | Iron canister shot.   | ...           | Some time.                         | Death; cerebral abscess.                                 |
| 22    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 9 days.                            | Death.   |
| 23    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 24    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 25    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 26    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 27    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 28    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 29    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 30    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 31    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 32    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 33    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 34    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 35    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 36    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 37    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 38    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 39    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 40    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 41    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 42    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 43    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 44    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 45    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 46    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 47    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 48    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 49    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 50    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 51    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 52    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 53    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |
| 54    | Bid.              | St. Louis Clinical Rec., p. 302.              | Round ball.           | ...           | 1 month.                           | Death.   |

| Case. | Reporter.         | Reference.                              | Foreign body.          | Re-<br>moved. | Time the foreign<br>body remained. | Result.   |
|-------|-------------------|---|------------------------|---------------|------------------------------------|---|
| 55    | Dase              | Amer. Med. Times, April, 1863.          | Musket-ball            | ..            | 8 weeks                            | Death: cerebral abscess, with no bad symptoms until the seventh week. |
| 56    | Dean, A. M.       | Army Med. and Surg. Mus., 2098.         | Conoidal ball          | R             | 11 days                            | Death: cerebral abscess. [observation five months.                    |
| 57    | Dean, H. M.       | Surg. Hist. Rebellion, p. 432.          | Ibid.                  | R             | 6 days                             | Recovery, with partial paralysis of lower limbs; under                |
| 58    | Demare, R.        | Brit. Jour. Med. Sci., April, 1865.     | Pistol-ball            | ..            | Indefinitely                       | Death.  |
| 59    | Devron            | Amer. Jour. Med. Sci., April, 1865.     | Blade of pen-knife     | ..            | 2 days                             | Death.  |
| 60    | Dupuytren         | Andrews, loc. cit., p. 209.             | Half of a ball         | ..            | Indefinitely                       | Recovery.   |
| 61    | Dwinnelle, J.     | Amer. Med. Recorder, 1823, p. 569.      | Part of a knife-blade  | R             | 2 years                            | Death.  |
| 62    | Edwards, T. P.    | Army Med. and Surg. Mus., 2121.         | Conoidal ball          | R             | 6 days                             | Death.  |
| 63    | Eve, P. F.        | Dublin Med. Press, 1846.                | Piece of earthenware   | R             | 15 hours                           | Recovery.   |
| 64    | Felding           | Richmond and Louisville Jour., 1870.    | Part of minie-ball     | R             | 7 years                            | Recovery; death from cerebral abscess after seven years.              |
| 65    | Fielding          | Philosophical Trans., 1799.             | Ball                   | ..            | 30 years                           | Recovery.   |
| 66    | Fetherston        | Cincinnati Lancet and Obs., 1878.       | Small rifle-ball       | R             | 35 days                            | Death.  |
| 67    | Fournier, M.      | Amer. Jour. Med. Sci., vol. xiv., 1847. | Blade of chisel        | ..            | Short time                         | Recovery.   |
| 68    | Gibbs, O. S.      | Brit. Med. Jour., 1864.                 | 12 splinters wood      | ..            | 13 days                            | Death: cerebral abscess.  |
| 69    | Gibson, A. J.     | Amer. Med. Recorder, p. 308.            | Rifle-ball             | ..            | Indefinitely                       | Recovery, with partial hemiplegia.                                    |
| 70    | Gilman, M.        | Amer. Med. and Surg. Mus., 1267.        | Musket-ball            | R             | 18 days                            | Death.  |
| 71    | Gray, C. C.       | Circular No. 3, 1865-71, p. 146.        | Knife-blade            | R             | 1 day                              | Recovery.   |
| 72    | Griffin           | Andrews, loc. cit., p. 303.             | Arrow-head             | R             | Few hours                          | Recovery.   |
| 73    | Gross, S. D.      | Gross's System Surg., vol. ii, p. 241.  | Ball                   | ..            | 6 months                           | Death.  |
| 74    | Guthrie           | Med.-Chir. Review, 1843.                | An ounce ball          | ..            | Indefinitely                       | Recovery.   |
| 75    | Ibid.             | Ibid.                                   | Musket-ball            | R             | Some time                          | Recovery.   |
| 76    | Ibid.             | Ibid.                                   | Ibid.                  | R             | 12 months                          | Death.  |
| 77    | Ibid.             | Ibid.                                   | Ibid.                  | ..            | Several months                     | Death during a fit of intoxication.                                   |
| 78    | Ibid.             | Ibid.                                   | Ibid.                  | R             | Some time                          | Ibid.   |
| 79    | Ibid.             | Ibid.                                   | Piece of ball          | ..            | 4 days                             | Recovery.   |
| 80    | Ibid.             | Ibid.                                   | Stem of tobacco-pipe   | ..            | Indefinitely                       | Death: cerebral abscess.  |
| 81    | Ibid.             | Ibid.                                   | Musket-ball            | R             | 12 days                            | Recovery; under observation two months.                               |
| 82    | Ibid.             | Ibid.                                   | Scrap of breech-pin    | R             | 12 months                          | Death: cerebral abscess.  |
| 83    | Halsestead, D. D. | St. Louis Med. and Surg. Jour., 1870.   | Buckshot               | R             | Indefinitely                       | Recovery; with vertigo on stooping and walking; under                 |
| 84    | Hamilton, W. L.   | Surg. Hist. Rebellion, p. 243.          | Pistol-ball            | R             | 11 days                            | Death: cerebral abscess.  |
| 85    | Hammond, O. M.    | Ohio Med. Recorder, 1877, 1878.         | Ibid.                  | R             | 24 days                            | Recovery.   |
| 86    | Hanke             | Andrews, loc. cit., p. 303.             | Ball                   | ..            | 6 years                            | Recovery; death from pressure after six years.                        |
| 87    | Harris, J. O.     | Boston Med. and Surg. Jour., 1866.      | Pistol-ball            | ..            | Indefinitely                       | Recovery; under observation seventy-two days.                         |
| 88    | Hartmann          | Andrews, loc. cit., p. 306.             | 16 small shot          | ..            | Many years                         | Recovery; death at 109 years.   |
| 89    | Hartmann          | Hennen's Prin. Mil. Surg., p. 239.      | Musket-ball            | ..            | Indefinitely                       | Death.  |
| 90    | Hammick           | Andrews, loc. cit., p. 306.             | 2 shot                 | ..            | Indefinitely                       | Recovery; under observation six months.                               |
| 91    | Heidenreich       | Hennen's Prin. Mil. Surg., p. 247.      | Bullet                 | R             | 3 days                             | Recovery.   |
| 92    | Hennen            | Ibid.                                   | Musket-ball            | ..            | 11 weeks                           | Death after excessive drinking. [tion four months.                    |
| 93    | Ibid.             | Ibid.                                   | Bullet                 | ..            | 20 days                            | Death; with giddiness and headache; under observa-                    |
| 94    | Ibid.             | Ibid.                                   | Musket-ball            | R             | 6 months                           | Recovery; death from acute disease after six months.                  |
| 95    | Ibid.             | Ibid.                                   | Needle                 | ..            | Indefinitely                       | Recovery; death from natural causes.                                  |
| 96    | Hildanus, F.      | Philad. Cent. 2, Obs. 2.                | Part of a ball         | ..            | 15 days                            | Recovery; under observation sixteen months.                           |
| 97    | Hodge, H. L.      | Surg. Hist. Rebellion, p. 182.          | Minie-ball             | R             | 10 days                            | Death; cerebral abscess.  |
| 98    | Horn, G. H.       | Amer. Jour. Med. Sci., Oct. 1871.       | Round ball             | ..            | 14 months                          | Ibid.   |
| 99    | Howard, B.        | Surg. Hist. Rebellion, p. 199.          | Piece of iron (1½ oz.) | R             | 6 months                           | Recovery.   |
| 100   | Hopkinson, J.     | Lancet, 1858, vol. ii, p. 307.          | Buckshot               | R             | Some time                          | Recovery; death from scarlet fever.                                   |
| 101   | Hughes, R.        | New York Jour. Med. and Surg., vol. iv. | Ball                   | R             | Indefinitely                       | Recovery; foreign body entered probably during child-                 |
| 102   | Hulse, C. W.      | Buffalo Med. and Surg. Jour., 1866.     | Slate-pencil (3 in.)   | R             | 4 months                           | Recovery.   |
| 103   | Hutchinson, J.    | Arch. der Heilkunde, 1875.              | Musket-ball            | R             | 7 days                             | Recovery.   |
| 104   | Huppert, M.       | Buffalo Med. Jour., 1866, 1867.         | Piece of wood          | ..            | 4 months                           | Recovery.   |
| 105   | Jameson, J. T.    | Army Med. and Surg. Mus., 685.          | Musket-ball            | R             | 7 days                             | Death.  |

| Case. | Reporter. | Reference. | Foreign body. | Re-<br>moved. | Time the foreign<br>body remained. | Result. |
|-------|-----------|------------|---------------|---------------|------------------------------------|---------|
|-------|-----------|------------|---------------|---------------|------------------------------------|---------|



| Case. | Reporter.                                    | Reference.   | Foreign body.         | Re-<br>moved. | Time the foreign<br>body remained. | Result.  |
|-------|--|--|-----------------------|---------------|------------------------------------|--|
| 107   | Janney, J. H.                                | Army Med. and Surg. Mus., 683.                                     | Musket-ball.          | ...           | 7 days.                            | Death.   |
| 108   | Robert, M.                                   | Brit. For. Med.-Chir. Rev. April, 1861.                            | Ball.                 | R             | 9 years.                           | Recovery.  |
| 109   | Judson, O. A.                                | Surg. Hist. Rebellion, p. 272.                                     | Conoidal ball.        | R             | 7 days.                            | Death; cerebral abscess.   |
| 110   | Kirby, J.                                    | Dublin Hospital Reports, vol. ii.                                  | Bullet.               | R             | 7 months.                          | Ibid.  |
| 111   | Langlet.                                     | Ibid.  | Musket-ball.          | ...           | Some time.                         | Recovery, with vertigo.  |
| 112   | Larrey                                       | Andrews, loc. cit., p. 30.   | Seven drachm ball.    | ...           | 18 months.                         | Death; cerebral abscess.   |
| 113   | Ibid.  | Ibid.  | Piece of hazel stick. | ...           | 4 days.                            | Death.   |
| 114   | Ibid.  | Ibid.  | Ball.                 | R             | Some days.                         | Recovery.  |
| 115   | Ibid.  | Ibid.  | Ball.                 | R             | Some time.                         | Death from hospital fever after two weeks.                       |
| 116   | Ibid.  | Ibid.  | Ball.                 | R             | Ibid.                              | Recovery.  |
| 117   | Ibid.  | Ibid.  | Ball.                 | R             | Ibid.                              | Recovery.  |
| 118   | Ibid.  | Ibid.  | Ball.                 | R             | Ibid.                              | Death.   |
| 119   | Ibid.  | Ibid.  | Ball.                 | R             | Ibid.                              | Death.   |
| 120   | Ibid.  | Ibid.  | Six-ounce iron ball.  | R             | 14 days.                           | Death.   |
| 121   | Ibid.  | Ibid.  | Point of javelin.     | R             | 14 years.                          | Recovery.  |
| 122   | Lawrance, W.                                 | Med.-Chir. Review July 1868.                                       | Musket-ball.          | R             | Several years.                     | Recovery, with right hemiplegia.                                 |
| 123   | Leavitt, T. L.                               | Eve on Wounds of Brain; Richmond and Louisville Jour., 1870, p. 1. | Pistol-ball.          | R             | 14 days.                           | Death.   |
| 124   | Leighton, N. W.                              | Brit. Med. Jour., 1865.  | Minié-ball.           | R             | 10 days.                           | Death; cerebral abscess.   |
| 125   | Lidell, J. A.                                | Surg. Hist. Rebellion, p. 200.                                     | Pistol-ball.          | R             | 9 hours.                           | Death.   |
| 126   | Loney, W.                                    | Army Med. and Surg. Mus., 1137.                                    | Round ball.           | ...           | to days.                           | Recovery, with constant headache; under observation five months. |
| 127   | Louise.                                      | Surg. Hist. Rebellion, p. 195.                                     | Carbine-ball.         | ...           | Indefinitely.                      | Death.   |
| 128   | Ibid.  | Lancet, 1855, p. 546.  | Rifle-ball.           | R             | 20 days.                           | Death; cerebral abscess.   |
| 129   | Ibid.  | Ibid.  | Ibid.                 | R             | Several hours.                     | Death.   |
| 130   | Ibid.  | Ibid.  | Minié-ball.           | ...           | 18 months.                         | Death; cerebral abscess.   |
| 131   | Ibid.  | Ibid.  | Ball.                 | ...           | 8 days.                            | Ibid.  |
| 132   | Ibid.  | Ibid.  | 2 pieces of ball.     | ...           | 8 years.                           | Death.   |
| 133   | Andrews, loc. cit., p. 305.                  | Cincinnati Lancet and Obs., 1870.                                  | Ball.                 | ...           | Many years.                        | Recovery; death from old age.                                    |
| 134   | Macdonald, M.                                | Mem. Acad. Surg. Syd. n. Trans., p. 47.                            | Arrow-head.           | R             | 4 months.                          | Recovery.  |
| 135   | Macdonald's Notes Surg. Crimean War, p. 179. | Pistol-ball.   | ...                   | R             | 18 days.                           | Death.   |
| 136   | Andrews, loc. cit., p. 298.                  | Ball.  | ...                   | R             | 1 year.                            | Death.   |
| 137   | Martiniere, N.                               | Mem. Acad. Surg. Syd. n. Trans., p. 45.                            | Musket-ball.          | ...           | Several years.                     | Recovery.  |
| 138   | Martin, C. H.                                | Richmond and Louisville Jour., 1873.                               | Blade of pen-knife.   | R             | 6 months.                          | Recovery.  |
| 139   | Mayer, H.                                    | Am. Med. Times, vol. vii.  | Ball.                 | R             | Short time.                        | Recovery.  |
| 140   | McCall, C. A.                                | Surg. Hist. Rebellion, p. 1873.                                    | Conoidal ball.        | R             | 3 hours.                           | Recovery; under observation thirteen months.                     |
| 141   | McConathy.                                   | Brit. Med. Jour., 1872.  | Conoidal ball.        | R             | Indefinitely.                      | Recovery.  |
| 142   | McGoy.                                       | Dublin Med. Press, 1845, p. 42.                                    | Piece of gun-stock.   | R             | 8 days.                            | Death after excessive drinking.                                  |
| 143   | McKee, J. C.                                 | Surg. Hist. Rebellion, p. 109.                                     | Conoidal ball.        | R             | 13 days.                           | Death; cerebral abscess.   |
| 144   | Ibid.  | Ibid.  | Ibid.                 | R             | 8 days.                            | Death.   |
| 145   | Meyer, N.                                    | Med. Record, Sept. 1871.   | Pistol-ball.          | R             | Indefinitely.                      | Recovery; under observation ten months.                          |
| 146   | Miller, H. V.                                | Am. Med. Monthly, 1855, p. 307.                                    | Ibid.                 | R             | 13 days.                           | Death.   |
| 147   | Miles, B. B.                                 | Army Med. and Surg. Mus., 3413.                                    | Musket-ball.          | ...           | 6 days.                            | Death.   |
| 148   | Ibid.  | Ibid.  | Ibid.                 | ...           | 25 days.                           | Death.   |
| 149   | Monahan, W. P.                               | Am. Jour. Med. Sci., July, 1866.                                   | Ibid.                 | ...           | 3 years.                           | Recovery.  |
| 150   | Moran, R.                                    | Ibid.  | Ball.                 | R             | 1 month.                           | Recovery.  |
| 151   | Murad.                                       | Andrews, loc. cit., p. 358.  | Ball.                 | R             | 9 1/4 months.                      | Death; cerebral abscess.   |
| 152   | Murray, J.                                   | Am. Med. Recorder, vol. x.   | Ball.                 | R             | Recovery.                          | Recovery; with loss of sense of smell.                           |
| 153   | Murray, J.                                   | Andrews, loc. cit., p. 366.  | Ball.                 | R             | Indefinitely.                      | Recovery; under observation one year.                            |
| 154   | Mursick.                                     | Surg. Hist. Rebellion, p. 202.                                     | Conoidal ball.        | ...           | 12 days.                           | Death.   |
| 155   | Mursick, G. A.                               | Army Med. and Surg. Mus., 2686.                                    | Musket-ball.          | ...           | 13 days.                           | Death; cerebral abscess.   |
| 156   | Ibid.  | Surg. Hist. Rebellion, p. 200.                                     | Ball.                 | ...           | 13 days.                           | Ibid.  |
| 157   | Ibid.  | Ibid.  | Conoidal ball.        | R             | 5 days.                            | Death.   |
| 158   | Ibid.  | Ibid.  | Ibid.                 | R             | 6 days.                            | Death; cerebral abscess.   |
| 159   | Moore, N. R.                                 | Army Med. and Surg. Mus., 1797.                                    | Pistol-ball.          | ...           | 8 days.                            | Death.   |
| 160   | Ibid.  | Ibid.  | Musket-ball.          | R             | 8 days.                            | Death.   |
| 161   | Ibid.  | Ibid.  | Ibid.                 | R             | 3 days.                            | Death.   |

| Case | Reporter.         | Reference.                                | Foreign body.          | Re-<br>moved. | Time the foreign<br>body remained. | Result.   |
|------|-------------------|---|------------------------|---------------|------------------------------------|---|
| 162  | Mussey, W. H.     | Cincinnati Lancet and Clinic, 1878        | Piece of wire.         | R             | A few hours.                       | Recovery.   |
| 163  | Nash, T. H.       | Dublin Med. Press, Sept. 1847.            | Breath pin.            | R             | Short time.                        | Death.  |
| 164  | Noble, J.         | Surg. Hist. Rebellion, p. 197.            | Conoidal ball.         | R             | 2 years.                           | Recovery; preceded by loss of sight and convulsions.                  |
| 165  | Norton, J. W.     | Surg. Hist. Rebellion, p. 198.            | Conoidal ball.         | R             | Short time.                        | Recovery; with paralysis of right arm.                                |
| 166  | Osmon, J. W.      | Circular No. 3, 1865-71, p. 148.          | Arrow-head.            | R             | 6 hours.                           | Death.  |
| 167  | Oakley, L. W.     | Surg. Hist. Rebellion, p. 197.            | Musket-ball.           | R             | Indefinitely.                      | Recovery, with impairment of mind; under observation [eleven months]. |
| 168  | O'Callaghan.      | Half-Yearly Abs. Med. Sci., 1845.         | Breath-pin.            | R             | 1 year.                            | Death after excessive drinking.                                       |
| 169  | O'Connell.        | Eve, loc. cit., p. 16.                    | Minie-ball.            | R             | 3 years.                           | Death.  |
| 170  | Ormsby            | Surg. Hist. Rebellion, p. 204.            | Buckshot.              | R             | 2 days.                            | Death.  |
| 171  | Page, C.          | Ibid.                                     | Conoidal ball.         | R             | 6 days.                            | Death.  |
| 172  | Parrish, W.       | Andrews, loc. cit., p. 301.               | Blade of knife.        | R             | Indefinitely.                      | Recovery; cerebral abscess.   |
| 173  | Parrish, W.       | Phil. Med. Times, 1872, 1873.             | Blade of knife.        | R             | Indefinitely.                      | Recovery; under observation six months.                               |
| 174  | Paynter, J.       | Dublin Jour. Med. Sciences, vol. xi.      | Stem of tobacco-pipe.  | R             | 4 days.                            | Death; cerebral abscess.  |
| 175  | Paynter, J. C.    | Surg. Hist. Rebellion, p. 196.            | Musket-ball.           | R             | 2½ days.                           | Ibid.   |
| 176  | Peterson, J. W.   | Ibid., p. 200.                            | Conoidal ball.         | R             | Indefinitely.                      | Recovery; under observation one year.                                 |
| 177  | Peterson, J. W.   | Med. Times and Gazette, 1878.             | Pistol-ball.           | R             | Indefinitely.                      | Death.  |
| 178  | Peterson, J. W.   | N. Y. Jour. Med. and Surg., vol. iv.      | Ball.                  | R             | 21 hours.                          | Recovery.   |
| 179  | Peterson, J. W.   | Mem. Acad. Surg., Sydenh. Trans., p. 46.  | Ball.                  | R             | Indefinitely.                      | Death.  |
| 180  | Peterson, J. W.   | St. Louis Med. and Surg. Jour., 1873.     | Pistol-ball.           | R             | 11 months.                         | Death; cerebral abscess.  |
| 181  | Randall, H. K.    | Lancet, 1830, 1831, p. 595.               | Musket ball.           | R             | 4 months.                          | Death.  |
| 182  | Randall, H. K.    | Lancet, 1830, 1831, p. 595.               | 23 small shot.         | R             | 11 weeks.                          | Death; cerebral abscess.  |
| 183  | Richards, T. G.   | Lancet, 1865, vol. i, p. 287.             | Piece of lead (2 oz.). | R             | 24 hours.                          | Death.  |
| 184  | Roland, O.        | Phil. Med. Times, 1876, p. 126.           | Knife-blade.           | R             | 4 days.                            | Death.  |
| 185  | Roddick, T. G.    | Canada Med. and Surg. Jour., 1874.        | Pist. 1-ball.          | R             | 10 days.                           | Death.  |
| 186  | Roemer, B.        | Surg. Hist. Rebellion, p. 279.            | Conoidal ball.         | R             | 1 year 8 months.                   | Recovery.   |
| 187  | Rogers, L.        | Med. Chir. Trans., vol. xiii, p. 283.     | Breath pin.            | R             | 26 days.                           | Recovery.   |
| 188  | Rowel, I.         | San Francisco Med. Press, July, 1862.     | Pistol-ball.           | R             | 5 days.                            | Death; cerebral abscess.  |
| 189  | Ruppert, D.       | Andrews, loc. cit., p. 304.               | Ball.                  | R             | 5 years.                           | Recovery; death from cerebral abscess after several years.            |
| 190  | Schell, H. S.     | Mem. Acad. Surg., Sydenh. Trans., p. 46.  | Point of a sword.      | R             | Indefinitely.                      | Recovery; death five years after injury.                              |
| 191  | Schell, H. S.     | Surg. Hist. Rebellion, p. 193.            | Pistol-ball.           | R             | 5 years.                           | Recovery, with loss of vision.  |
| 192  | Selwyn, H. A.     | Lancet, 1838.                             | Blade of knife.        | R             | Few hours.                         | Recovery.   |
| 193  | Simmons, H. A.    | Richmond and Louisville Jour., 1874.      | Pistol-ball.           | R             | Indefinitely.                      | Recovery.   |
| 194  | Small, W. G.      | Med. and Surg. Report, Oct. 1863.         | Minie-ball.            | R             | 71 days.                           | Death; cerebral abscess.  |
| 195  | Smart, C.         | Half-Yearly Abstract, Jan. 1867.          | Blade of knife.        | R             | 13 years.                          | Recovery; death from cerebral abscess after thirteen years.           |
| 196  | Smith, J.         | Circular No. 3, 1865-71, p. 147.          | Arrow-head.            | R             | 28 days.                           | Death; cerebral abscess.  |
| 197  | Smith, J.         | Boston Med. and Surg. Jour., 1866.        | Ball.                  | R             | Indefinitely.                      | Recovery, with loss of vision.  |
| 198  | Stankford, R. S.  | Surg. Hist. Rebellion, p. 201.            | Musket-ball.           | R             | 8 days.                            | Death.  |
| 199  | Steele, A. K.     | Ibid.                                     | Ibid.                  | R             | 15 days.                           | Death.  |
| 200  | Sutherland, T. H. | Chicago Med. Examiner, 1873.              | Ball.                  | R             | 13 days.                           | Death.  |
| 201  | Ibid.             | Army Med. and Surg. Mus., 1725.           | Fragments of a ball.   | R             | 5 months.                          | Death; cerebral abscess.  |
| 202  | Strengier.        | Surg. Hist. Rebellion, p. 204.            | Conoidal ball.         | R             | 4 h.                               | Ibid.   |
| 203  | Taylor, C.        | Surg. Hist. Rebellion, p. 203.            | Conoidal ball.         | R             | Indefinitely.                      | Death.  |
| 204  | Taylor, C.        | Edinburgh Med. Jour., vol. lxi, p. 1126.  | Ball.                  | R             | Indefinitely.                      | Recovery, with hemiplegia; under observation one year.                |
| 205  | Terry, C.         | Richmond and Louisville Jour., 1872.      | Canister shot.         | R             | 6 days.                            | Recovery; under observation for seven months.                         |
| 206  | Ibid.             | Ibid.                                     | Minie-ball.            | R             | Indefinitely.                      | Recovery.   |
| 207  | Ibid.             | Ibid.                                     | Ball.                  | R             | 11 days.                           | Recovery; death from cerebral abscess after several years.            |
| 208  | Terry, J. W.      | Surg. Hist. Rebellion, p. 198.            | Ball.                  | R             | 11 days.                           | Recovery.   |
| 209  | Thompson.         | Andrews, loc. cit., p. 301.               | Ball.                  | R             | 17 days.                           | Recovery.   |
| 210  | Thompson, J. H.   | Amer. Jour. Med. Sciences, vol. vi, 1843. | Breath pin.            | R             | 4 days.                            | Death.  |
| 211  | Thompson, J. H.   | Med. and Surg. Reporter, July, 1875.      | Pistol-ball.           | R             | 7 days.                            | Death.  |
| 212  | Thompson, W. M.   | Army Med. and Surg. Mus., 1843.           | Musket-ball.           | R             | 19 days.                           | Death.  |
| 213  | Thorp, J. H.      | London Hospital Reports, 1865.            | Small shot.            | R             | 80 days.                           | Death; cerebral abscess.  |
| 214  | Thorp, J. H.      | London Hospital Reports, 1865.            | Breath-pin.            | R             | 3 months.                          | Recovery.   |
| 215  | Truman, H. H.     | Lancet, 1840, 1841, p. 177.               | Part of musket-ball.   | R             | 3 months.                          | Recovery.   |
| 216  | Trull, W. B.      | Eve, loc. cit., p. 4.                     | Part of musket-ball.   | R             | 3 days.                            | Death.  |

| Case. | Reporter. | Reference. | Foreign body. | Re-<br>moved. | Time the foreign<br>body remained. | Result. |
|-------|-----------|------------|---------------|---------------|------------------------------------|---------|
|-------|-----------|------------|---------------|---------------|------------------------------------|---------|

| Case. | Reporter.         | Reference.  | Foreign body.                | Re-<br>moved. | Time the foreign<br>body remained. | Result.  |
|-------|-------------------|---|------------------------------|---------------|------------------------------------|--|
| 217   | Turnipseed, E. B. | London Med. Recorder, Jan. 1875.....              | Blade of knife.....          | R             | 3 years.....                       | Recovery.  |
| 218   | Vanderveer.....   | Eve, loc. cit. p. 3.....                          | Conoidal ball.....           | R             | 3 days.....                        | Recovery, with impairment of mind. [tion five years.                           |
| 219   | Van Puyne.....    | Surg. Hist. Rebellion, p. 193.....                | Small bullet not stated..... | R             | Indefinitely.....                  | Recovery, with frequent attacks of vertigo; under observa-<br>tion six months. |
| 220   | Walsh.....        | London Med. Recorder, p. 1875.....                | Small bullet.....            | R             | Several years.....                 | Recovery, with epilepsy.   |
| 221   | Walsh.....        | Andrews, loc. cit. p. 46.....                     | Point of dagger.....         | R             | 5 years.....                       | Recovery, with impairment of sight; under observa-<br>tion six weeks.          |
| 222   | Ward, J. A. M.    | Bonet, Biblioth. Chirur., Cent. II. Obs. 73.....  | Pistol-ball.....             | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion three months.       |
| 223   | Virol.....        | Andrews, loc. cit. p. 306.....                    | Ball.....                    | R             | 2½ years.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 224   | Voltaire.....     | Ibid. p. 303.....                                 | Musket-bill.....             | R             | 5 years.....                       | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 225   | Whebe.....        | Ibid. p. 304.....                                 | Musket-bill.....             | R             | 5 years.....                       | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 226   | Wilson, G. B.     | Cincinnati Med. and Surg. News, 1861.....         | Buckshot.....                | R             | 1 day.....                         | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 227   | Wilson, J. F.     | Surg. Hist. Rebellion, p. 192.....                | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 228   | Woodward, J. J.   | Ibid. p. 305.....                                 | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 229   | Wilder, A. M.     | Ibid. p. 306.....                                 | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 230   | Wilder, A. M.     | Western Med. and Surg. Jour., 1850.....           | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 231   | Zachariae.....    | Andrews, loc. cit. p. 46.....                     | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 232   | Zachariae.....    | University Hospital Case-Book.....                | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 233   | Zachariae.....    | University Hospital Case-Book.....                | Part of knife-blade.....     | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 234   | Zachariae.....    | London Med. Reporter and Review, 1866.....        | Pistol-ball.....             | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 235   | Zachariae.....    | Amer. Jour. Med. Sci., Oct. 1867, p. 431.....     | Ball.....                    | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 236   | Zachariae.....    | Andrews, loc. cit. p. 284.....                    | Piece of ball.....           | R             | 125 days.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 237   | Zachariae.....    | Ibid. p. 284.....                                 | Piece of ball.....           | R             | 125 days.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 238   | Zachariae.....    | Ibid. p. 286.....                                 | Musket-ball.....             | R             | 64 days.....                       | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 239   | Zachariae.....    | Ibid. p. 286.....                                 | Musket-ball.....             | R             | 64 days.....                       | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 240   | Zachariae.....    | Ibid. p. 300.....                                 | 2 balls.....                 | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 241   | Zachariae.....    | Ibid. p. 300.....                                 | 2 balls.....                 | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 242   | Zachariae.....    | Boston Med. and Surg. Jour., 1870, p. 313.....    | Buckshot.....                | R             | Several years.....                 | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 243   | Zachariae.....    | Amer. Jour. Med. Sci., Oct. 1867, p. 431.....     | Buckshot.....                | R             | Several years.....                 | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 244   | Zachariae.....    | London Med. and Surg. Jour., 1833, p. 470.....    | Stem of tobacco-pipe.....    | R             | 5 months.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 245   | Zachariae.....    | Eve, loc. cit. p. 5.....                          | Musket-ball.....             | R             | 3 months.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 246   | Zachariae.....    | Ibid. p. 5.....                                   | Ball.....                    | R             | 4 months.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 247   | Zachariae.....    | Detroit Review Med. and Pharm., 1869, p. 244..... | Blade of knife.....          | R             | 7 days.....                        | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 248   | Zachariae.....    | Cincinnati Lancet and Observer, 1876.....         | Pistol-ball.....             | R             | 7 months.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 249   | Zachariae.....    | Presbyterian Hospital, Phil. de Phila.....        | Half pistol ball.....        | R             | 11 years.....                      | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 250   | Zachariae.....    | Holmes's Syst. Surg., vol. II. p. 172.....        | Ball.....                    | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 251   | Zachariae.....    | Surg. Hist. Rebellion, p. 187.....                | Musket-ball.....             | R             | Indefinitely.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 252   | Zachariae.....    | Ibid. p. 191.....                                 | Conoidal ball.....           | R             | Ibid. p. 191.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 253   | Zachariae.....    | Ibid. p. 191.....                                 | Ibid. p. 191.....            | R             | Ibid. p. 191.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 254   | Zachariae.....    | Ibid. p. 191.....                                 | Ibid. p. 191.....            | R             | Ibid. p. 191.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 255   | Zachariae.....    | Ibid. p. 191.....                                 | Ibid. p. 191.....            | R             | Ibid. p. 191.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 256   | Zachariae.....    | Ibid. p. 192.....                                 | Ibid. p. 192.....            | R             | Ibid. p. 192.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 257   | Zachariae.....    | Ibid. p. 192.....                                 | Ibid. p. 192.....            | R             | Ibid. p. 192.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 258   | Zachariae.....    | Ibid. p. 192.....                                 | Ibid. p. 192.....            | R             | Ibid. p. 192.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 259   | Zachariae.....    | Ibid. p. 193.....                                 | Ibid. p. 193.....            | R             | Ibid. p. 193.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 260   | Zachariae.....    | Ibid. p. 193.....                                 | Ibid. p. 193.....            | R             | Ibid. p. 193.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 261   | Zachariae.....    | Ibid. p. 194.....                                 | Ibid. p. 194.....            | R             | Ibid. p. 194.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 262   | Zachariae.....    | Ibid. p. 194.....                                 | Ibid. p. 194.....            | R             | Ibid. p. 194.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 263   | Zachariae.....    | Ibid. p. 194.....                                 | Ibid. p. 194.....            | R             | Ibid. p. 194.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 264   | Zachariae.....    | Ibid. p. 194.....                                 | Ibid. p. 194.....            | R             | Ibid. p. 194.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 265   | Zachariae.....    | Ibid. p. 194.....                                 | Ibid. p. 194.....            | R             | Ibid. p. 194.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |
| 266   | Zachariae.....    | Ibid. p. 194.....                                 | Ibid. p. 194.....            | R             | Ibid. p. 194.....                  | Recovery, with vertigo on exertion; under observa-<br>tion ten months.         |

| Case. | Reporter. | Reference.                         | Foreign body.           | Re-<br>moved. | Time the foreign<br>body remained. | Result.  |
|-------|-----------|------------------------------------|-------------------------|---------------|------------------------------------|--|
| 267   |           | Surg. Hist. Rebellion, p. 194..... | Buck-shot.....          | ..            | Indefinitely.....                  | Recovery, with headache and epilepsy; under observation five months.   |
| 268   |           | Ibid. p. 194.....                  | Missile not stated..... | ..            | Ibid. ....                         | Recovery, with vertigo on exertion; under observation three years and eight months.                          |
| 269   |           | Ibid. ....                         | Conoidal ball.....      | ..            | Ibid. ....                         | Recovery; under observation thirteen months.   |
| 270   |           | Ibid. ....                         | Buck-shot.....          | ..            | Ibid. ....                         | Recovery; with vertigo and dizziness.  |
| 271   |           | Ibid. ....                         | Conoidal ball.....      | ..            | Ibid. ....                         | Recovery, with headache and vertigo; impairment of eye and ear; under observation one year and eight months. |
| 272   |           | Ibid. ....                         | Canister shot.....      | ..            | Ibid. ....                         | Recovery; under observation nine months.   |
| 273   |           | Ibid. ....                         | Ball.....               | ..            | Ibid. ....                         | Recovery, with paralysis of lower extremities; under observation thirteen months.                            |
| 274   |           | Ibid. ....                         | Ball.....               | R             | 7 years.....                       | Recovery.  |
| 275   |           | Ibid. ....                         | Conoidal ball.....      | R             | 11 days.....                       | Recovery.  |
| 276   |           | Ibid. ....                         | Ibid. ....              | R             | 3½ months.....                     | Recovery, with epilepsy.   |
| 277   |           | Ibid. ....                         | Missile not stated..... | R             | 7 days.....                        | Recovery, with dizziness and headache.   |
| 278   |           | Ibid. ....                         | Conoidal ball.....      | R             | 7 days.....                        | Recovery.  |
| 279   |           | Ibid. ....                         | Ball.....               | R             | 2 years.....                       | Recovery.  |
| 280   |           | Ibid. ....                         | Ball.....               | R             | 1½ years.....                      | Recovery, with pain on exertion.   |
| 281   |           | Ibid. ....                         | Ball.....               | R             | 1 day.....                         | Recovery, with loss of memory.   |
| 282   |           | Ibid. ....                         | Pistol-ball.....        | R             | 7 days.....                        | Death.   |
| 283   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 284   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 285   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 286   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 287   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 288   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 289   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 290   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 291   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 292   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 293   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 294   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 295   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 296   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 297   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 298   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 299   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 300   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 301   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 302   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 303   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 304   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 305   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 306   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 307   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 308   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 309   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 310   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 311   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 312   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 313   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 314   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 315   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |
| 316   |           | Ibid. ....                         | Ibid. ....              | ..            | 12 hours.....                      | Death.   |

Circular No. 3, 1865-77, p. 8.  
Holtz's System Surgery, vol. II, p. 171.



# A GENERAL SYSTEM OF MEASUREMENT FOR URETHRAL, UTERINE, RECTAL, AND OTHER INSTRUMENTS: AND AN ADAPT-ABLE METRIC GAUGE.\*

BY CHARLES HERMON THOMAS, M.D.

OF the three methods of numbering urethral instruments employed to any extent in this country, that known as the French system may be said to dominate, if not to have superseded, the others. No one attempts longer to defend the purely arbitrary English scale, with its practical inaccuracies and limited range of sizes; while the "American scale," recently proposed, though an improvement in some respects on the English, is lacking in that simplicity which it should possess to entitle it to general adoption.

According to the French system,—for it is truly a system,—each size in a set of catheters or bougies is derived from, and identical with, the number of *millimeters in circumference* which such instrument actually measures. Thus, while No. 1 is 1 mm. in circumference, No. 2 is 2 mm., No. 3 is 3 mm., and so on uniformly throughout.

The American scale, like the French, is founded on the metric system, but its successive sizes increase by *half-millimeters in diameter*; its numbers are consecutive in units, however, and therefore correspond neither with the figures which represent diameters or circumferences. Practically it differs from the French in that it does away with one in every three of the French sizes, a somewhat questionable improvement, though the only merit claimed for it; but in doing this a new and arbitrary series of numbers is introduced,—a serious disadvantage. For, while No. 1 is 1 mm. in diameter, No. 2 is 1.5 mm., No. 3 is 2 mm., and so on with a widening disparity till No. 20 is reached, which is 10.5 mm. measured in the same manner.

It will readily be conceded that the almost universal demand among those engaged in general scientific work for unity of standard in measures of length, capacity, and weight, which has resulted in the wide-spread adoption of the metric system, has a practical and not a sentimental basis. The various branches of

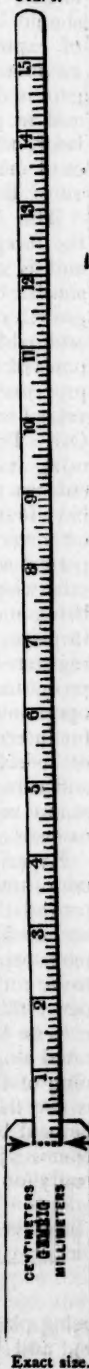
the science of medicine have need of the improved methods and means of ready interchange of results of observation and experiment, which have become common to allied sciences. And in the subdepartments of urethral, gynecic, and rectal surgery especially there is present urgent need of the establishment of a general system of measurement and record of the dimensions of the appliances employed, and indirectly, by means of these, of the calibre of the passages to which they relate.

A *General Scale* suited to this wide range of applications, and which shall combine the essential requisites of simplicity, definiteness, and convenience of use, together with universal scientific intelligibility, is undoubtedly practicable. For this purpose it is only required that the use of all conventional numbers or sizes, as such, be abandoned, and that there be adopted in their stead actual circumferential or perimetric dimensions, expressed in terms of the metric unit.

This proposition, while it includes the French urethral scale, as described, is a systematic extension of it, and fitly embraces all specula and dilators, together with their related explorers and fixed cutting instruments, for whatever part designed,—whether the male or female urethra, the rectum, vagina, cervix uteri, œsophagus, Eustachian tube, or lachrymal duct. Considered in its practical relations, it forms a comprehensive system of unification, based upon the best known standard. For whatever the faults of the metric rule for general mechanical purposes, it is perfect for surgical uses; and the remarkable unanimity with which metric terms have been accepted as a part of the language of science gives promise, through their use in this connection, of valuable results; especially contributing to international uniformity.

In denoting data in accordance with the General Scale, milli-

FIG. 1.



\* Exhibited to the Philadelphia County Medical Society, June 25, 1879.

meters will naturally be used for the smaller instruments and passages, while for the larger—as rectal and vaginal—centimeters should be employed. The changed form of expression will then be, for example, 20 mm. instead of No. 20 catheter,—a gain in definiteness with no loss of brevity; and in place of Sims's No. 1 Vaginal Dilator, as at present, its equivalent 10 cm. : or 8 cm. as the proper substitute for No. 10 of English rectal bougies.

The Adaptable Metric Gauge renders the foregoing scheme directly practicable, and is a simple appliance, mechanically similar to the glover's measure, the outgrowth of an effort to secure the highest attainable accuracy and precision for purposes of record, comparison, and operative procedure. For instance: during several years I have made somewhat frequent use of Otis's Dilating Urethrotome, and, though using at different times the best procurable constructions of that admirable instrument, have found that a ready means of verifying or correcting its index was essential to its perfect working. One now in use, and an otherwise faultless piece of mechanism, being measured accurately over the knife in place, shows an excess of size over that registered of 4.3 mm. Such an error not recognized and provided against, in an operation of such delicacy as that of Otis for internal urethrotomy, whose only hope of success is founded on strict accuracy and correspondence of measurements, may at any moment be the source of mischief, or even of fatal results.

Experience of more than a year in the use of the gauge, as illustrated (Fig. 1), has proved that it is most conveniently made and used when printed upon strong parchment-paper or thin celluloid. It is then to be cut out, following the line of its borders; the broad end, which is the handle, is to be backed with cardboard and perforated along the dotted line at the beginning of the scale; the narrow end, which is the flexible measuring strip, is then to be bent backward and passed through the opening just made, when the instrument is ready for use. The object to be measured



being placed within the sliding loop (Fig. 2), and the ends being drawn upon in

opposite directions, the dimensions in millimeters or centimeters may be read off from the point on the measure between the arrow-heads.

Viewed in the light of its uses, and being accurate to a fraction of a millimeter, the gauge is an "instrument of precision," adapted to ascertaining the dimensions of the perimeters of a great variety of forms in uniform terms, and possessing the special value of utilizing old appliances; for with it their equivalence under the general scale is at once determined. When contrasted with the ordinary scale or gauge-plate, the adaptable gauge will be seen to be possessed of several important advantages. It, unlike the former, has a great range of capacity; is as well fitted to measure instruments of irregular outline—urethrotomes, metrotomes, divulsers, folding specula, and the like—as perfect cylinders; and, moreover, is itself capable of being instantly verified by comparison with any standard metric rule.

1807 CHESTNUT STREET.

## NOTES OF HOSPITAL PRACTICE.

### JEFFERSON MEDICAL COLLEGE HOSPITAL.

CLINIC OF PROF. S. D. GROSS, M.D., LL.D., D.C.L.,  
PROFESSOR OF SURGERY IN JEFFERSON MEDICAL COLLEGE, ETC.

ON CLUB-FOOT: ITS VARIETIES, PATHOLOGY,  
AND TREATMENT BY SUBCUTANEOUS TENOTOMY—HISTORY OF THE OPERATION—AFTER-TREATMENT.

**G**ENTLEMEN,—This apparently healthy child is brought to us by its mother with the statement that there is some deformity requiring our attention. It is now four months old, and the condition has existed since birth. As we stand the baby on its feet, you notice that the weight of the body rests on the outer side of the foot, the heel and the inner border being drawn upward by the contraction of the calf muscles and the fibres of the tendo Achillis, together with the adductors of the foot. This variety of talipes, or club-foot, is called *varus*. There is a condition the reverse of this, in which the sole of the foot is turned outward by the contraction of the abductors, and the weight is borne upon its inner border, which is called *valgus*; it is a very uncommon affection as compared with *varus*, and is very rarely congenital. When the con-

traction exists solely in the calf muscles and their tendon, the patient walks on the ball of the foot and the phalanges, the heel being lifted several inches from the ground. This deformity has been termed the phalangeal variety of club-foot, or *talipes equinus*. When existing alone it is rarely if ever congenital. In combination with the preceding forms, however, it almost constantly exists, forming the well-known compound conditions of *talipes equinovarus* and *talipes equinovagus*. Finally, we have a condition known as *calcaneus* or calcaneal club-foot, in which the toes are lifted from the ground and the patient walks upon his heel. This is caused by a contraction, almost always congenital, of the anterior tibial muscle, the extensor of the great toe, and occasionally of the common extensor of the foot; or it may be occasioned primarily by paralysis of the calf muscles.

The deformity before us is that of *equinovarus*, or simply *varus*. This condition may appear in various degrees and may affect one or both feet; perhaps more frequently it is confined to one, the other escaping entirely, or it may exist in both of the corresponding extremities in different degrees. In some families there seems to be a hereditary tendency to this affection. It occurs in both sexes; but in my experience it has been encountered most frequently in males.

In this case we have the highest degree of the deformity. We notice a depression at this portion of the inner margin of the foot, due to the contraction of the plantar aponeurosis, which frequently complicates this condition, and in some cases is quite marked, requiring subcutaneous division of this structure with a tenotome. In our patient, however, the plantar contraction is comparatively slight; the main trouble is caused by the contraction of the tendo Achillis and the gastrocnemius muscle. In estimating the probable results of treatment, you must not forget that the bones, in these cases, are also more or less distorted, especially the heel-bones, the astragalus, cuboid, calcaneum, and scaphoid; but the remaining bones of the foot, the metatarsal and phalangeal, participate more or less in the deformity, though not to so great an extent as the former. The ligaments are also imperfectly and unequally developed. Not infrequently club-foot is associated with other evidences of defective

development of the organism, such as hare-lip, exstrophy of bladder, or bifid spine; and I have seen cases where these all co-existed.

The cause of club-foot is unknown. It has been supposed to be due to deficient amniotic fluid, and the consequent pressure of the uterus upon the feet of the foetus; but in such a case why would the effects be seen only in the feet? Why would it not in a similar way influence the upper extremities and other portions of the body? My own theory is that the condition is originally caused by defective power in the nerves supplying the part, which leads to inability in the muscles to perform their proper functions, and unfits them for resisting the normally active opposing muscles.

This child is four months old, and appears well developed. Youth is no bar to the operation for club-foot; on the contrary, treatment should be instituted early to prevent permanent deformity of the bones. How shall this be accomplished? In ordinary cases you may correct the trouble by mechanical appliances alone; but when the deformity exists in such a high degree as in this case I hold that all such efforts must either prove abortive or require more time to obtain a successful result than the attendants or parents are willing to bestow. The proper way is to divide the tendo Achillis about three-quarters of an inch above the attachment to the heel-bone. I am in the habit of making a small incision through the skin at the desired spot with the sharp-pointed tenotome, which is then laid aside and a probe-pointed instrument introduced through this opening, in order to divide the tendon. The preliminary incision is so slight as to be scarcely more than a puncture, just admitting the blunt tenotome, which is then inserted just in front of and parallel with the tendo Achillis; the edge is then turned directly backward, and the tendon cut with a sawing motion of the knife. The small puncture is now hermetically sealed with an adhesive strip. This is generally a bloodless operation, though sometimes a small vein is divided, from which there is an escape of a few drops of blood; the slight hemorrhage is, however, readily controlled by pressure. I have never cut the posterior tibial artery, but if this should happen the proper plan would be to cut through the artery, completely dividing it, and apply compression; the ligature will rarely be



needed. After the tenotomy, the false ankylosis and adhesions are broken up by strong efforts of the hand, and the foot is placed in an apparatus to keep it in an improved condition. This is usually some modification of Scarpa's shoe.

True subcutaneous tenotomy was first performed by Stromeyer, of Hanover, in 1831. Previous to that date the operation had been attempted by free incision, but it was a failure. In 1816, Delpech, a distinguished surgeon of Montpellier, instituted the present operation. He was the first to divide the tendo Achillis subcutaneously, so to speak, but unfortunately he also made a small incision on each side about half an inch in length, into which he inserted his knife in cutting the tendon.\* It remained for Stromeyer to place this operation on a firm and enduring basis by clearly defining the principles and method of performing this operation.

We have here a shoe materially the same as that invented by Scarpa when he was professor in the University of Padua. He was the author of a work on club-foot, and also wrote on hernia, on the eye, and on various other affections. The shoe has two lateral iron braces running from the sole of the foot up above the knee; there is a hinge at the ankle, and another at the knee, allowing flexion and extension of these joints; there are also horizontal bands or girdles, one above and one below the knee, which keep the apparatus close to the limb. The shoe is made of soft leather, and laces up the front. The sole is of steel and is in two pieces, the anterior one being rotated in a horizontal plane around the posterior to a moderate extent, the amount of abduction or adduction of the front part of the foot thus produced being regulated by a set-screw at the side. Another screw regulates the flexion at the ankle-joint. When the apparatus is put on, a roller bandage should be previously applied from the foot to the thigh, although this is not essential.

In small children it is best to give a few whiffs of chloroform when the operation is performed, so that struggling will not interfere with the surgeon; but the operation itself is nearly painless. I am in the

habit of putting on the shoe immediately after the operation, as it saves trouble.

I may state, by way of parenthesis, that it is a question that has been much discussed of late years whether a man or woman could have chloroform administered to them during sleep, for the purpose of robbery or rape, they being perfectly unconscious. I have succeeded in administering chloroform to children during sleep without wakening them, but they usually sleep more soundly than adults. It has been claimed in the courts that men and women have been similarly influenced; but I doubt it very much. You see this child has wakened now, although it was asleep when the chloroform administration began.

During the operation of tenotomy for club-foot, the child should be placed upon its abdomen. This child is very fleshy, and there is some difficulty in finding the tendon, but now having inserted the knife the structure readily yields before it. I am now extending and bending the foot so as to break up any adhesions that we can control in this way, for the purpose of furthering the after-treatment. This child has been operated upon before, and the operation is always a more unsatisfactory one when it is performed for the second or third time. There is always in a primary operation a distinct snap when the tendon is divided, which is prevented in second or third operations by the adhesions that have been contracted with the surrounding parts.

Adhesive plaster and a compress of patent lint are placed over the puncture. A roller bandage is now smoothly applied, and we are ready for the shoe, which has been especially fitted by the instrument-maker for this case. The apparatus must be taken off in forty-eight hours, and subsequently removed every day, in order that the limb may be washed and well rubbed. Great care must be taken to prevent any chafing or unequal pressure.

We frequently find in these cases that the muscles of the leg, and even of the thigh, are impaired in their functions and changed and wasted in their structure. Electricity should be used in such cases, and sorbefacient liniments may be resorted to; shampooing the muscles, or massage, is of the greatest benefit. The duration of treatment varies according to the case; it may extend from two and a half to six or

\* The fate of Delpech was a peculiar one. A young man came to him with varicocele, upon which he operated successfully. The patient, however, being engaged to be married at a near date, soon became tormented with the fear of being unable to consummate the marital contract, and in a fit of rage he assassinated his surgeon.



eight months. The after-treatment is of great importance, and the general health of the patient should receive due attention.

(To be continued.)

## TRANSLATIONS.

**ETIOLOGY OF ALOPECIA AREATA.**—Dr. Hans Büchner contributes his share to this vexed question. His conclusions are as follows: 1. The hypothesis that the loss of hair in *area celsi* is due to faulty innervation of the trophic nerves is untenable on anatomical and physiological grounds. 2. The theory which attributes *area celsi* to diminished nutrition with lessened growth of the hair is no explanation, but only a description of the affection. 3. The fungous theory is the only one which is justifiable in the present condition of our knowledge. The lack of microscopic proof of the presence of fungi up to the present time does not invalidate this hypothesis, because, under present circumstances, small single-celled non-colonized schizomyceton may escape observation. Certainty in this question can only be attained by careful researches in cultivation together with inoculations. — *Virchow's Archiv*, Bd. 74, Heft iv.

**DIPHThERIA IN FOWLS.**—M. Nicati fears the possibility of the transmission of diphtheria from birds to men. M. Trasbot has endeavored vainly to inoculate dogs and pigs, while the inoculation from one fowl to another is successful. A student of M. Trasbot placed some of the diphtheritic deposit from fowls upon his fauces without succeeding in inoculating the poison. M. Trasbot therefore considers Nicati's fears groundless. M. Mégnin also denies Nicati's theories, considering the so-called diphtheria of domestic fowls a parasitic disorder which cannot be inoculated in the human race. — *Le Progrès Méd.*, 1879, p. 345.

**INTRA-VAGINAL AUSCULTATION IN THE EARLY DIAGNOSIS OF PREGNANCY.**—Prof. Ferdinando Verardini says that while exterior or supra-abdominal auscultation is very uncertain, the utero-placental murmur heard through the medium of the intra-vaginal stethoscope on the other hand forms an incomparable means of diagnosis, and one which can be employed successfully in the very earliest stages of pregnancy. Heard

more strongly than usual, this murmur leads to the suspicion of twin pregnancy. Heard very distinctly in the later months of pregnancy, it points to placenta prævia. — *Four. des Sci. Méd. de Louvain*, 1879, p. 219.

**SEVERE INJURY OF THE FINGERS—ALOEES USED AS A DRESSING—CURE.**—Millet, in a case of contused and lacerated wound of the fingers, where the phalanges only hung by a strip of skin and the tendon of the flexor digit. profundus, applied a split with an occlusive bandage containing powdered aloes, thickly covering the wound. Complete cure, with mobility of the fingers, resulted, two dressings being used in fourteen days. The use of aloes as a dressing in wounds opening into the joints has long been known to veterinary surgeons. In 1874. Delieux de Savaignac recommended its use in general surgery. — *Cbl. f. Chir.*, No. 21, 1879; from *Rec. de Pharm. Mil.*

**PRÆPUTIAL CALCULI.**—Dr. Moeller had under his care a child 3 years of age who suffered with phimosis. The mother had remarked that it urinated with difficulty, that the prepuce swelled up considerably at the moment, and that occasionally the stream suddenly stopped, causing the child to scream. The præputial opening only admitted a sound two millimetres in diameter, which detected a hard body. The præputial opening was dilated, and a calculus of thirty grains was extracted. Lewin, of Berlin (*Berlin. Klin. Wochens.*, March 31 and April 7, 1879), records three cases of præputial calculus, and cites fifteen more, all which are on record. These calculi may either arise from the præputial glandular secretion, from urine stagnating in the præputial sac, or from small urinary calculi lodging in this locality. — *Four. des Sci. Méd. de Louvain*, 1879, p. 271.

**FATAL RESULT OF IRRIGATING THE PUERPERAL UTERUS.**—Bruntzel tells of a case in which sudden death occurred in a puerperal woman after intra-uterine injection. It was the woman's second labor, and up to the fourth day everything had gone on regularly. Having gotten out of bed and worked about the house, the patient was seized with chills, and the lochia became putrid. Intra-uterine irrigation with a one and a half per cent. solution of carbolic acid was employed, and was well borne. On the next day the injection was repeated; one litre had been used, when suddenly the patient's eyes became dis-

torted, she lost consciousness, and, in spite of every restorative, succumbed. Autopsy by Ponfick gave negative results; neither thrombi, air emboli, nor direct entrance of water into the veins could be demonstrated. Since free exit was given through the cervical canal, the conclusion reached was that the patient had died from shock. Bruntzel thinks that hereafter intra-uterine injections should be employed only where blood-poisoning is threatened by retention of the secundines.—*Berlin. Klin. Wochens.*, 1879, p. 201.

**INFLUENCE OF THE PERSPIRATORY SECRETION ON THE DIGESTIVE POWER OF THE GASTRIC JUICE, ETC.**—Sasseski, working under the direction of Professor Manassein, arrives at the following conclusions:

1. The secretion of sweat diminishes the digestive power of the gastric juice.
2. The acidity of the gastric juice is diminished.
3. The absolute and relative acidity of the urine is at the same time diminished.
4. This influence becomes more marked in proportion to the amount of the perspiration.

In dyspeptics who perspire freely this secretion ought to be, if possible, diminished to improve the digestive powers.—*Cbl. f. Chir.*, No. 21, 1879; from *St. Petersb. Med. Wochens.*

**THE SURGICAL TREATMENT OF WANDERING KIDNEY.**—Fr. Keppler remarks that even when without any complication wandering kidney may act very unfavorably upon the general ability for work, as well as the peculiar action of the organ itself. It may give rise to suddenly developing disturbance of nutrition so as to require surgical interference. Keppler gives a series of illustrative cases. In many of these the condition was suddenly developed, in others gradually; the right kidney was the one invariably affected. Among the symptoms are digestive disturbances (chronic constipation) and neuralgia. As to the physical diagnosis, Keppler asserts, contrary to the usually-received opinion, that the presence of wandering kidney cannot be demonstrated by percussion in the lumbar region, since the percussion-note supposed to be caused by the kidney has in reality nothing to do with this organ, and persists when it has been removed. Bimanual palpation in the lumbar and hypochondriac region after Freund's method can alone be de-

pended upon. Extirpation of the kidney, says Keller, is the only way of relieving the symptoms. Two cases are given in which the right kidney was removed by abdominal section. In both of these a good recovery was made and the patients restored to health and activity.—*Cbl. f. Chir.*, 1879, No. 23; from *Arch. f. Klin. Chirurgie*.

**SYMPTOMS OF TUBERCULAR MENINGITIS.**—M. Ferd. Dreyfous, in a recently published thesis, endeavors to show that many of the usual symptoms of tubercular meningitis are due to the predominance of lesions in the region of the pons and pedunculi. He also calls attention to some clinical symptoms not often noticed, although quite frequent, which may explain the same localization. After reviewing previous work in this direction, Dreyfous speaks of the fact that, as in the majority of nervous diseases, the symptoms observed depend far more on the locality of the lesions than upon their nature. These symptoms are, disturbances of sensation, generalized anæsthesia, complete, alternate, or simple facial hemi-anæsthesia, hemi-hyperæsthesia, generalized hyperæsthesia, motor disturbances, alternate hemiplegia, localized convulsions, choreiform movements, grinding of the teeth, ocular troubles, conjugate deviation of the eyes from paralytic strabismus, nystagmus, troubles of deglutition, of respiration, a special cry, vasomotor phenomena, possibly a peculiar "*émotivité*," as in paralysis agitans, rotation of the head, almost constant decubitus on the injured side, finally, a tendency to gyratory movement from right to left in a lesion situated to the right, and from left to right in a lesion on the left side.

In the second part of his thesis, Dreyfous gives a large number of detailed observations of great interest, showing that some of these symptoms occur in all cases of tubercular meningitis. He lays stress in particular upon the cry, which is of two kinds: in the early period short and sharp, in the second and third periods prolonged and plaintive. He also speaks of the characteristic attitudes of the patient. In lesions of the peduncles this is crouched and lateral; in cerebellar lesions the decubitus is dorsal, with flexion of the forearms. When granulations have invaded the pons, extension is the rule. The thesis is an able one and of great interest.—*Abstract in La France Méd.*, 1879, p. 365.

## PHILADELPHIA MEDICAL TIMES.

PHILADELPHIA, JULY 19, 1879.

### EDITORIAL.

#### "FREE QUININE."

ON the last day of its recent session Congress passed what is known as the "McKenzie Quinine Bill," and, having been signed by the President, this has now become law. It reads as follows:

"A bill to put salts of quinine and sulphate of quinine on the free list.

*"Be it enacted, etc.,* That from and after the passage of this act the importation of salts of quinine and sulphate of quinine shall be exempt from customs duties, and all laws inconsistent herewith are hereby repealed."

The passage of this bill has been secured only after much effort, in which it is said that Southern influence has been largely felt. Medical men and societies in different parts of the country have, however, repeatedly petitioned Congress for the passage of some such measure, and it may fairly be said to have been the desire of the medical profession throughout the United States that quinine should be placed upon the free list. The motive of this desire has been various. With most of the advocates of "free quinine" the feeling that such an important drug should be procurable as readily and at as low a price as possible has been doubtless uppermost; with others a vague sentiment, not unakin to that of the "sand-lot" patriots, that some "cursed monopolists" somewhere were sucking the life-blood of the people, may have had weight; while a smaller, but probably the most influential and active of all, were unquestionably moved by the laudable desire to get part of the business enjoyed by the few great firms in this country who chiefly supplied the market.

It was natural that those whose profit was largely dependent upon this manufacture should bring forward the opposite view; and this was done chiefly in the form of gratuitously-distributed information, showing the sources of the barks, the expense of procuring them, and the probable destruction of our native manufactures if foreign products should be allowed to compete with those of this country thus heavily handicapped. In addition, it was thought by disinterested persons that much stress should be laid upon the absolute and proverbial purity of the native drug. Scarcely an article known to commerce in the form of drug or chemical which can be adulterated is found pure. Only, no slur has ever been cast upon American quinine. This should have been a strong argument against letting loose the flood of foreign drugs of whose purity we can have no guarantee, and which, by all rules of analogy, will probably prove largely adulterated wherever adulteration is possible.

But the question of "free quinine" is at present solved in the affirmative. Free it is, but already higher in price; and there is only too much reason to fear that the two chief manufacturers of the article in this country will find it to their advantage to abandon the field, and to leave us in complete dependence upon foreign sources for one of the most important drugs in the pharmacopœia.

### CORRESPONDENCE.

#### LONDON LETTER.

THE societies are closed for the present session, after a rather monotonous winter. Consequently something may now be said about medical institutions in this country; and workhouse infirmaries are worthy of a few words. Before proceeding to discuss their management, a word or two may not be out of place as to our poor-law arrangements. If Americans are as imperfectly acquainted with our pauper arrangements as we are with yours,—for I do not even know if you have



any poor and any poor-laws in your rich country,—the information will not be altogether unwelcome. Up to a comparatively recent period, the workhouse infirmary was but a portion of the general building set apart for infirmary purposes. The word "workhouse" means, as its construction implies, a place of residence for men who could not obtain work, and who there broke stones, picked oakum, or engaged in some form of labor more or less remunerative. Such was a workhouse immediately after the passing of the new Poor-Law Act some thirty-five years ago. But now a workhouse is a very different place: it is a home for the destitute, the infirm, the crippled, and, indeed, every one who cannot succeed in getting a living outside. Of course it is obvious that such places should not be too comfortable for a portion at least of their inmates. Heaven knows our working-classes are pauperized enough as it is, without educating them to regard the workhouse as an asylum where they can spend their declining years in comfort and, indeed, for many of them, in luxury. There is a sufficiency of plain food and regular hours, but the drawback is, there are regular and early hours for going to bed and getting up, and no public-houses in which to have a drink and a row. Consequently, a portion of the inmates are off as soon as they can to their old haunts and ways. Some come in regularly for the winter; others only pay casual visits to the workhouse.

At present the workhouse is a large block of buildings ruled by a superintendent, who is not a doctor. At no great distance there stands another large block of buildings,—the infirmary,—under the control of a medical superintendent. Of course, for both there is a committee of guardians, ordinary and *ex-officio*. An *ex-officio* guardian is a magistrate; the ordinary guardian is elected by the ratepayers, to look after their interests—and the interests of the poor. It would be easy to sneer at both classes of guardians, if any good would come therefrom. The *ex-officio* guardian is, or labors under the impression that he is, a gentleman, or would like to be thought one. The ordinary guardian is usually a pushing man, who sees his way to a certain social success by devotion to public duties. A certain antagonism exists, very naturally, betwixt the two sections, which tends to limit their offensive power, else the life of officials under their sway would be very unenviable, if not utterly intolerable. As all superior appointments are made under the sanction of the local government board,—the central authority which rules and controls all local administrative bodies,—the officials are fairly protected against their governing committees, as the consent of this central authority is required for the appointment and removal of these officials. Consequently, such officials are not entirely at the mercy of the caprice of

their committees, one of the curses of institutions "supported by voluntary contributions."

The medical superintendent is the local ruler of the institution known as the "Infirmary," or "Sick-Asylum," the terms being synonymous. Some of these institutions are of great size, containing from five hundred to eight hundred beds. As regards the buildings, they all are built upon the pavilion system, or as near an approach to it as is practicable. There is no waste of money on ornamentation, and the bricks in the interior of the building are merely painted over, the brick-work being in no way concealed thereby. This gives a certain look of a non-imposing character, not to put too fine a point upon it; but still the wards are thoroughly comfortable. The ventilation is "cross," and is effective, by dint of the assiduous attention of the nurses; for the cockney, like other Britishers, has no affection for fresh air, and has an excessive dread of a draught. Large, airy, well-lighted wards are unfamiliar and no doubt repulsive to a certain section of the inmates. The beds are comfortable, and the bedclothes sufficient in quantity and of good, if plain, material. The dietary is liberal, but has the drawback which exists with all English cookery, viz., that it is expensive, and not what it might be and ought to be. Solid chunks of meat, either in joints or massive chops, are wasteful in the first place. Then the chops are commonly only half eaten, and the plate with a cold chop and cold potatoes, or other vegetable, is not appetizing. Why stews cannot be made is a mystery to me. Of course one is quite aware of the fact that a stew suggests the idea of meat that has been cooked before, and that such stews are neither nice to eat nor easy to digest, as every dyspeptic knows well, no matter what the social rank. But why stews should not be largely made with a small quantity of fresh meat, with a certain amount of fat therewith, and with potatoes one day, and with peas, chopped carrots, and turnips another day, is only known to the true, genuine British cook, who will learn nothing and forget nothing. Probably if any member of the committee was to pay some attention to the food, he would get well lectured at home, and find his wife, or other head of the household, as ignorant and as prejudiced as the infirmary cook, and as strongly in favor of "plain roast and boiled." They are a long-suffering people, these Anglo-Saxons, with all their energy, and have endured much domestic privation at the hands of their spouses. How some men find the patience to put up with the dietary provided for them is unknown to me; and some housewives would drive me to distraction in a fortnight, and, as it is, make one profoundly thankful that by somebody else marrying them, one is thereby in no danger of doing so oneself.

But this is a digression, and the committee-

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man who feels inclined to commiserate the pauper about his dietary probably recognizes, with a sigh, that the pauper, in that respect, is as well off as he himself is at home. There is a sufficiency—indeed, an abundance—of food, such as it is, when cooked, and with all its potentialities if cooked properly. Then there is no stint of medicines, no matter how expensive, and every medical and surgical appliance and instrument is provided at once if its curative utility can in any way be substantiated. Then, as to the value of these institutions to their inmates there can be no question, on the part alike of the patients and their medical advisers. For the man who wishes to work, such places are invaluable. He can study the clinical phenomena of diseases; he can observe the action of remedial agents and of dietary,—for is not the patient absolutely under his control?—and then, if he can't cure him, he can verify his clinical notes by the appearances found in the dead-house, for the patient can't take himself off and die in a hole like a rat, as the patients of other hospitals can, and do very often. This is a phase of human meanness which ever excites my wrath and indignation. After receiving the benefits of an institution, and an opportunity comes for making some compensation to the public for their charity and the medical man for his pains, the dying patient takes himself off, and so any lesson he could teach is lost. I well remember a villain of this detestable sort when at Leeds. His condition excited keen interest in Clifford Allbutt; the wretch's suspicions became aroused; he would stay no longer in the infirmary. He was placed under my surveillance at the Dispensary; but the interest taken in him again roused his suspicions, and he betook himself to a private doctor. He knew we wanted to have a look at one of his lungs, and determined we should not, and, to aggravate me still further, planted himself where he could sit at the window and grin at me on my way round every second day. The scoundrel knew he was dying, and used to be there at the window with the utmost regularity, to show himself to me and chuckle at my disappointment. Perhaps this experience has embittered me against the patient who will not aid the advance of science, or, at least, assuage a pardonable and natural curiosity.

Many of the medical officers of these institutions are able, energetic men, who like their profession, who are ready to cut for stone, do an amputation, or try the last new remedy. Others are mere officials, who perform their medical duties in a perfunctory manner, but who are good administrators, and who see that the place works smoothly. Yet there is much left to be desired. Surely these places ought to be utilized for the purposes of medical teaching rather than the hospitals, which are supported by voluntary contributions. A regular staff of physicians and surgeons could readily be

found for every one of these institutions. But there are two sets of persons opposed to such arrangement: 1, the committee-man, who sees in an unpaid medical man one who would thwart him sometimes, and, perhaps, divide his supreme control; and, 2, the rate-payer, who might have a natural objection to any expenditure beyond what is absolutely requisite. Nevertheless there is a great waste of excellent "material," to use an expression in vogue in the *Krankenhaus* of Vienna.

These representatives of the rate-payers are men not to be trifled with in their way, and are inclined to take summary measures with the recalcitrant. The other day, passing the Islington workhouse, I looked in to see if there was anything novel. My attention was quickly arrested by the following notice, which was placarded up all over the receiving-room. "Saint Mary, Islington. Caution.—Whereas, many persons have been admitted into the Workhouse of the Parish, suffering from Delirium Tremens, caused by excessive drinking, and have thereby become chargeable to the Parish, when they might have been earning sufficient wages to maintain themselves, had they avoided intemperate habits. Notice is hereby given, that the Guardians of the Poor of this Parish will in future cause such persons to be charged at the Police Court with *wilfully neglecting to maintain themselves*, and thereby becoming chargeable to the Parish (for which offence they are liable to be imprisoned, with Hard Labour, for one Calendar month), or otherwise proceeded against according to law. By order, December, 1878." Whether any such prosecution has actually yet taken place or not, I do not know; but the idea is an excellent one.

These guardians are practical anyhow, and their wits are often exercised with their material, which is often of an objectionable character. Of course, within the infirmary the committee can only act through their medical officer, who is usually a man of sense who does not court conflict. Besides, they know their hands are partially tied. The Local Government Board elects and removes, and before their officer could be got rid of the central authority must be convinced by evidence furnished, while the medical officer's defence is taken before any decision is arrived at, and this insures the medical officer a fair hearing and protects him from malicious busybodies. As said before, the medical officers of these parochial infirmaries are infinitely better off than the house surgeons of charitable institutions, who are often shamefully persecuted by objectionable members of the committee, in collusion with the matron, by whom a system of espionage is carried out. Some central authority—"The Charity Commission," for instance—ought to exist in regard to institutions. "Supported by Voluntary Contributions." House surgeons and resident medical officers may not invariably be immaculate

and without blemish, but many a one has been very badly used and maltreated by the sort of conspiracy just alluded to.

The medical officers go all round the infirmary every morning, and again in the evening, as well as being called whenever occasion requires, so that their duties are heavy. The wards form an exercise-ground of no very limited area, and with but a vitiated atmosphere to respire. The patients are very interesting both as to themselves and their maladies, and their histories are often curious. Men who have seen better days in every sense of the word, men who are gentlemen by birth and bringing up, men who are accomplished scholars, or who have held responsible positions, men who have been excellent workers till crippled by an accident, are all there alongside of the most degraded social waifs. Of course this is unfortunate, but it is unavoidable; and, from personal observation, I can say that the medical officers, alike the superintendent and his subordinates, do all that lies in their power to mitigate the asperities in the lot of these unfortunates. As to the attention paid professionally to the patients, it is all that can be desired, and no pains are spared to restore each patient to his place as a working social unit. Some further account of these institutions, especially their lying-in wards, will be given in a subsequent letter.

The grave has scarcely closed over Charles Murchison, when another victim to disease of the heart has died suddenly. William Tilbury Fox is well known by his writings on diseases of the skin. The son of a distinguished medical man, to my mind the ablest country practitioner I have ever been privileged to know, he was trained up to medicine from his childhood. Like many other men who ultimately win their way to fame in some specialty, Fox, after a brilliant student career at University College, commenced practice as a general practitioner. Then he determined to work at a special subject, and at first selected midwifery. This he soon abandoned for diseases of the skin, to which he devoted special attention, and soon attained a reputation. In the mean time the problem of how to make a living was solved by his working for the *Lancet*, of which journal he was for some time the working editor. This of course led up very satisfactorily to a good consulting practice, for Tilbury Fox knew the little ways of London as thoroughly as any man I have ever come across.

He became the Physician for Diseases of the Skin at University College Hospital, where he had an elaborate arrangement of baths for the purposes of treatment. In the midst of his prosperity he became conscious that he was the subject of disease of the heart. He and Murchison were great friends. They both suffered from aortic regurgitation, and when Murchison was called away, Fox began

to put his house in order. He went to Paris for a few days of rest, when he was seized with angina, which proved fatal, but not with the suddenness which marked the end of Murchison. Both were Christians in what Fox called "the now, I fear, much-despised sense of the word," and Fox, with the enthusiasm of a convert, left on record his profession of faith for his obituary notice in the *Lancet*. Fox was a keen-witted, shrewd observer of men as well as of skins, and possessed much of his father's talent, but not his commanding ability. Every one sympathizes with the bereaved old man lying on his death-bed; indeed, since the above was written he has died. His oldest son, who was associated with him in his practice, was carried off prematurely; he lived to see another son win a world-wide reputation, when he is swept off in his prime. A younger son is just mounting the ladder to distinction, but his father has not lived to see him win his spurs; he had the satisfaction of knowing that he will win them. Dr. Thomas Fox co-operated with his older brother in the production of an "Epitome of Skin Diseases," and is himself a rising dermatologist of much promise. He carries with him the good wishes of every one for his future success, and no one who knows him feels any doubt about his capacity to maintain for the name of Fox the reputation which has been won for it in relation to the diseases of the skin.

J. MILNER FOTHERGILL.

## PROCEEDINGS OF SOCIETIES.

### PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, APRIL 10, 1879.

THE PRESIDENT, DR. H. LENOX HODGE, in the chair.

*Caries of the vertebrae and general miliary tuberculosis.* Presented by Dr. E. T. BRUEN.

CONSTANTINE W., æt. 31 years, was admitted to the Philadelphia Hospital, February 14, 1879. He stated that deaths have occurred in his immediate family from acute diseases only, and there was no evidence of phthisis or scrofula. His sickness seemed to have dated from September, 1878; before this period he enjoyed perfect health. In the month just mentioned his legs swelled slightly; he became constipated, with anorexia. Feelings of malaise, without any definite complaint, succeeded the above symptoms, and during January, 1879, he noticed that his abdomen commenced to swell and the œdema of the legs disappeared. There was no history of diarrhoea, jaundice, or vomiting, although he steadily lost flesh. When examined on the above date, his abdomen was found distended; the measurement thirty-seven inches; there

was moderate ascites, but much of the distention of the abdomen was occasioned by gas in the intestines. There was no pain on pressure over any portion of the abdomen, nor was there any thickening of the abdominal walls; on the contrary, these tissues were thinned out and very compressible. The spleen was enlarged, dulness measuring six inches vertically by eight inches longitudinally. The liver was not increased in size, as was demonstrated by percussion. There was no œdema of the feet, no albumen in the urine, nor any abnormal deposit. Over the lungs the respiratory murmur was broncho-vesicular, the bronchial element predominating, and at the bases of both lungs fine subcrepitant râles could be heard over a space occupied by the breadth of two fingers. There was a persistent expectoration of white frothy mucus. Other physical signs were consistent with those obtained by the examination of a healthy chest. Heart-sounds were natural, and the limits of præcordial dulness were observed to accord with normal dimensions. Between the crest of the ilium and the lower ribs, in a position equidistant from both, and three fingers' breadth from the spines of the vertebræ, I noticed a swelling the size of a man's hand. This swelling felt doughy, very much the same feeling as when a fatty tumor is examined. This tumor, however, disappeared when the patient was placed on his face, and the spot became resonant, though the tympany was evidently transmitted. The size of the tumor was increased when the patient sat up, and the tumor was not altered by the act of coughing, nor was there any noticeable impulse communicated to it.

On four subsequent occasions I attempted to aspirate this tumor, using different needles of larger calibre each time. Twice after the operation the patient experienced an attack of hæmaturia, lasting five or six days, but subsiding after suitable treatment and rest. I was able to withdraw on each of these occasions a cheesy material sufficient to fill the needle of an aspirator, but never did I succeed in withdrawing pus in greater amount than half a drachm. The material, microscopically examined, contained shrivelled pus-cells, oil-globules, large amount of granular débris; also a few epithelial cells, many reddish-yellow spheres (which suggested spheres of leucin); the above indicated pus undergoing cheesy degeneration. Without lingering over the many interesting clinical features of the case, I will state that the abscess was not believed to be connected with the liver, as there was absence of enlargement of that organ, jaundice, pain over hepatic region, or any history or evidence of intestinal disease. The abscess was believed to have an origin in the tissue surrounding the kidney, or to proceed from necrosis of the vertebræ. But the facts appeared to militate against the latter diagnosis, as there was no

pain on pressure over any of the vertebral spines, and the ordinary tests of passing sponges wet alternately with hot and cold water up and down the vertebral column resulted negatively, as did Rosenthal's test with electricity. There was no spinal curvature nor pain when the erect position was assumed. To these facts I desire to call especial attention. The ascites, which diminished in amount during the treatment of the case, was attributed to tubercular peritonitis, due to the absorption of pus from the abscess, and tuberculosis of the lungs was suspected.

I would call attention to the statement that there was no abdominal pain nor retraction or thickening of the abdominal walls. Over the lungs, until within a week of the patient's death, which occurred April 1, 1879, broncho-vesicular breathing continued, but at that time numerous fine, dry, crackling râles could be recognized from the apices of both lungs to their bases, and irregular patches of dulness could be mapped out on percussion. There was never any expectoration beyond the frothy mucus mentioned above. I would also say that over the abscess there was never any pain or any redness, although the cavity gradually became very superficial. Believing the abscess not to be due to caries of the spine, it was opened by my colleague, Dr. White, and at least ten or twelve ounces of pus in a cheesy, fetid state escaped, but on examination with a long bullet-probe dead bone could be distinctly recognized on the bodies of one of the dorsal vertebræ. The death of the patient was accelerated by the operation, through capillary oozing of blood occasioned by the diminished pressure on the vessels; yet, under similar circumstances, without the knowledge that caries existed, I should consider the operation justifiable.

It seems to me a question well worthy of discussion whether the best treatment of chronic abscesses without tendency to point is to open them to prevent general tubercular infection, or to risk this danger and avoid the operation through dread of increasing suppuration.

The temperature record from February 17 to April 1 ranged between 99° and 103½° Fahr.

The *post mortem* examination resulted as follows. On opening the abdominal cavity about a pint and a half of fluid was found within it. The intestines were closely matted together by tubercular inflammation, and slightly adherent; it was difficult to tear them asunder.

The peritoneum of the intestines themselves was thickly studded with typical miliary tubercle, and the diaphragm and peritoneum covering it were tightly bound down to the liver. The vessels of the intestines were injected, but the mucous surface of the ileum was free from ulceration. The spleen presented a most unusual appearance; in the parenchyma and beneath the capsule the miliary nodules could be noticed, but in addi-



tion discrete yellow masses of cheesy material could be recognized through the capsule, varying in size from a pea to a cherry; composed, however, as an aggregated material. On laying the organ open these could be seen scattered throughout the tissue, but leaving large masses of splenic pulp between them, differing thus from miliary tubercle. Orth speaks of similar masses as a second form in which tubercle is found chiefly in scrofulous persons. The patient's disease of the vertebræ was not traumatic; was it not scrofulous? Orth states that masses of this kind can be lifted out by the forceps without tearing the spleen, differing thus from a similar appearance in certain cases of leucocythæmia, in which instance the masses are adherent, being intimately involved in the structure of the follicles. These masses could be easily raised from their position by means of the dissecting forceps, and I believe them to be large-sized cheesy tubercle.

The liver appeared normal in size, but with an undue proportion of fibrous tissue, evidenced by the well-defined lobulation of the organ. The kidneys were large, weighing nine or ten ounces respectively; the cortical portion appeared swollen to a very marked degree. This is to be observed because no albumen was noticed in the urine during life, save only during the attacks of temporary hæmaturia. Neither liver nor kidneys presented any traces of tubercle macroscopically.

In the sheath of the psoas muscle a collection of pus was detected, which, had life continued, would doubtless have pointed in a few days, having burrowed down to Poupart's ligament. The body of the last dorsal vertebra was involved by caries, and the second lumbar vertebra contained a large sequestrum. The cavity in the body of this vertebra was large enough to contain a lime. The abscess had pointed behind, above the quadratus lumborum muscle. The cellular tissue back of the right kidney was normal, showing no evidences of inflammation.

In the lungs miliary and cheesy tubercles were abundantly distributed in the middle and upper lobes, but in the inferior lobes they were only sparsely scattered, much of the parenchyma of the lung containing air, the vesicles being normal. In the apices of both lungs were found small abscesses of simple inflammatory origin as large as a lime. The pleura was much thickened, and the opposing surfaces of the pulmonary and costal pleura contained between their folds recent inflammatory lymph. In the walls of the pleura I found another small abscess containing cheesy pus. Doubtless, during the entire period he was under my care the tubercles had been slowly accumulating, but the physical signs were, I repeat, negative, until about one week before the death of the patient.

Dr. O'HARA said the specimen reminded him of the case of a woman who suffered from

spinal caries of the lower dorsal and lumbar regions, and, in consultation with Dr. Willard, an abscess was supposed to exist. A plaster-of-Paris bandage was applied. She had suffered more or less for a period of two years. After the bandage was applied for some weeks, a large abscess pointed under Poupart's ligament. The patient, however, refused any surgical interference. A spontaneous rupture of the abscess finally occurred, and it continued to discharge pus for several weeks, when it ultimately healed. The woman was upwards of sixty years old, and is now in ordinary good health.

Dr. HODGE remarked in reference to the diagnosis of caries of the spine, that he thought that the most delicate test of this pathological condition is the pain produced by motion. Even when no pain is experienced upon pressure along the line of the spine, the patient will be unable to stoop and raise himself again without suffering pain and without the help of his arms.

Formerly the abscess was left to terminate itself, or the surgeon waited until it was nearly ready to rupture, and then opened it by a valve-like incision. Lately many have advocated the antiseptic method. Dr. Hodge has had very good results in the opening of such abscesses under the carbolic acid spray, as advocated by Mr. Lister, and also by the use of the hyperdistention method of Mr. Calender.

Dr. BRUEN said the diagnosis of the case during life, in consultation with his colleagues, had been either perinephritic abscess, or abscess in the walls of the abdomen. Though caries was suspected, the idea was dismissed as untenable, because all the symptoms of caries, though looked for, were absent. The abscess would not have been opened had the diagnosis of caries been sustained. The operation was performed to prevent a general tuberculosis by absorption of pus.

The temperature was too high in the evening and too low in the morning to indicate acute miliary tuberculosis. In three cases of this disease that he had previously seen, the temperature had never been over 102° Fahr.; the average being from 99½° and 101½° Fahr. until just before death, when there was a fall to 97° Fahr., attended by a profuse sweating. Indeed, his cases were all marked by the occurrence of frequent profuse sweats. The duration of the lives of these patients was from ten to fifteen days, with *very rapid pulse*. The reason Wunderlich gives a higher range of temperature in acute miliary tuberculosis he believes to be due to the association of inflammatory catarrhal complications in the cases he has reported. In the patient before us there was evidence of catarrhal inflammation in the lungs, and also the suppuration, to prevent the temperature being typical; nor was there any sweating.

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position of the caries were not involved in the pathological process, and therefore the symptom of pain was not elicited upon the application of hot and cold sponges along the spine. The electrical current he did not think reached the diseased points. These facts accounted to his mind for the failure of the most reliable tests, but he had no explanation to offer for the absence of pain on movement or when the erect position was assumed. The absence of pain on pressure, retraction of the abdomen, or thickening of the abdominal walls was remarkable, when the extent of the tubercular inflammation is considered.

*Report of the Committee on Morbid Growths.*—"A microscopical examination of a thin section of the spleen demonstrates the whitish nodules to consist of lymphoid cells, with a delicate fibrillar, reticular, intercellular substance. At the centre of the nodules, their structure has undergone a granular metamorphosis, while their periphery retains the adenoid character. No blood-vessels could be observed in the nodules. The new formations may be considered tubercles experiencing caseous transformation.

"May 22, 1879."

*Metacarpo-phalangeal and phalangeal joints from a case of rheumatoid arthritis.* Presented by Dr. LOUIS STARR.

Ann —, æt. 50 years, was admitted to the Episcopal Hospital on December 2, 1878, suffering with acute mania. No history could be obtained. The fingers of both hands were strongly flexed, forming an acute angle with the palms, and were dislocated in the direction of flexion, at the metacarpo-phalangeal joints. The bases of the first row of phalanges rested against the palmar surfaces of the shafts of the metacarpal bones, and the convex, somewhat roughened heads of the latter projected half an inch beyond the dorsal surfaces of the phalanges. The phalanges were crowded together, and their combined breadth was less by half an inch or more than that of the metacarpal bones. Voluntary movements were limited to slight, inefficient flexion and extension, and any attempt at further motion caused pain and produced a sensation of moist crepitation. The fingers were abducted; the second and third phalanges were extended, and the joints were stiff. The thumbs were unaffected; their movements, if anything, being more than usually free. The four lesser toes of each foot presented the same conditions as the fingers, though in a less marked degree; the great toes, like the thumbs, were unaffected. There were no evidences of cardiac, pulmonary, or renal disease. Death occurred on December 10.

At the *autopsy* the metacarpo-phalangeal and the first phalangeal joints of the right middle finger only were examined. Metacarpo-phalangeal joint—anterior ligament thickened, posterior ligament deficient. Ar-

ticular cartilages entirely absent. Articular facets of bones roughened by osseous protuberances and somewhat eburnated. Protuberances most marked on metacarpal bone. Attempt at a new articular facet on the palmar surface of metacarpal bone behind its head, where the base of phalanx rests; new surface covered with fibrous tissue and red, villous projections. Articular cavity dry. Phalangeal joint—a few red, villous processes from the synovial membrane extending between the articular surfaces; otherwise healthy.

*Spindle-cell sarcoma of the knee.* Presented by Dr. H. LENOX HODGE.

This specimen was removed by amputation through the thigh, on March 22, 1879, from a woman 54 years of age. She had never married. Her occupation was that of a school-teacher. Her general health had always been delicate. She first began to suffer from weakness and pain in the region of the knee, in April, 1877. In May, 1878, she began to use crutches on account of increasing pain in the knee. Since then the pain has become so severe as to confine her to bed and to require the constant use of anodynes. Her general health has been greatly impaired, but there is no evidence of disease elsewhere than at the knee. The operation was done at the Presbyterian Hospital. The following report and examination of the tumor has been made by my friend Dr. Seiler, Pathologist to the Hospital:

"PHILADELPHIA, April 4, 1879.

"DR. H. LENOX HODGE: Dear Sir,—On making incisions into the tumor of the knee, I found that the interior was composed of a dark-red mass, having the consistence of a soft clot, extending around the knee-joint under the skin and subcutaneous connective tissue down to about five inches below the head of the tibia, and above to about three inches above the joint. The upper fifth of the tibia was denuded of its periosteum, and the surface of the bone roughened, while small detached pieces of bone were found in the red mass in the neighborhood of the head of the tibia. The patella and the femur were apparently not affected. Several nodules, varying in size from that of a walnut to that of an egg, containing the same dark-red clot-like substance, were found in the tissues adjacent to the central mass. On splitting the tibia and femur lengthwise the medulla of the former presented a dark-red appearance, filling not only the shaft but also the head of the tibia, occupying the place of the cancellated structure. The medulla of the femur appeared normal.

"A microscopic examination of the central mass proved it to be composed of plates of osseous cartilage, connected with each other by a delicate network of fibrous tissue, the meshes of which were filled with red blood-corpuscles.

"A section made from the periphery of the

mass showed under the microscope small, spindle-shaped cells lying in close contact with each other, having large oval nuclei, while the vessels appeared to be nothing but channels between the cells. The medulla from the head of the tibia exhibited the same character of cells. From these appearances, I would infer that the tumor is a spindle-celled sarcoma, having undergone teleangiectatic degeneration with cartilaginous transformation.

C. SEILER."

## REVIEWS AND BOOK NOTICES.

**AN ATLAS OF HUMAN ANATOMY.** Illustrating Most of the Ordinary Dissections, and Many not usually practised by the Student, accompanied by an Explanatory Text. By RICKMAN JOHN GOODLEE, M.S., F.R.C.S.; Fellow to University College; Assistant Surgeon to University College Hospital, and Senior Demonstrator of Anatomy in University College. Philadelphia, Lindsay & Blakiston, 1878. Part I. Large quarto.

This atlas is intended particularly for the medical student, although it will be found useful by the surgeon. The present number comprises four large quarto or small folio plates, each containing two pictures about half life-size in chromo-lithograph, representing dissections about the head and neck. Drawn boldly and with a certain amateurish sketchiness, these plates will not compare for beauty or finish with French or German pictures of regional anatomy, yet for practical purposes they are probably just about as good, beside being quite original.

The "explanatory text" which accompanies the atlas is separately printed in the octavo form, and includes a number of smaller pictures. The explanation of the plates themselves is printed with them on loose sheets, and is convenient for reference.

**ESSENTIALS OF CHEMISTRY, INORGANIC AND ORGANIC, FOR THE USE OF STUDENTS IN MEDICINE.** By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry in the Medical Department University of Vermont, etc. New York, William Wood & Co., 1879. 32mo, pp. 257.

Omitting all topics not essential to an understanding of those chemical problems which have a direct bearing upon the practice of medicine, Dr. Witthaus directs attention more to the chemistry of therapeutics than to that of pharmacy, while physiological chemistry has been treated of as fully as the limits of the volume will permit. He presupposes a certain acquaintance with the first principles of chemistry and with the elementary chemical manipulations such as may be gained by a few weeks in a chemical laboratory. A beginner entirely ignorant of chemistry would

probably not be able to understand this book, but the medical student of a first-class college, or the practitioner who desires to furbish up and add to his stock of practical information on chemical subjects, will find this an admirable book for the purpose. It has been thrown into the catechetical form, which gives directness and force to its teachings, and in looking over it one is constantly struck with the desire of the author to preserve its scientific character while constantly giving it a practical direction. Not taking the place of larger works, it can confidently be recommended within its self-imposed limits.

**THE PHARMACOPŒIA OF THE BRITISH HOSPITAL FOR DISEASES OF THE SKIN, LONDON.** Edited by BALMANNO SQUIRE, M.B. Lond., Senior Surgeon to the Hospital. London, J. & A. Churchill, 1879. 16mo, pp. 80.

Mr. Squire's practical mind constantly leads him to devising new methods for the cure of skin-diseases. In the present instance we are indebted to him for a series of well-arranged formulæ which have stood the test of trial at the Skin Hospital. Besides the formulæ, there are certain useful directions for the employment of baths, caustics, etc., which make this little volume a useful one for the general practitioner as well as the specialist.

**PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES.** By GEORGE HENRY FOX, A.M., M.D., Clinical Professor of Dermatology. Starling Medical College, etc. Part I.: Comedo. *Acne vulgaris*, *Lepra tuberosa*, Elephantiasis; Part II.: Keloid, Rosacea, Psoriasis *nummulata*, *Ichthyosis simplex*. Quarto. New York, E. B. Treat, 1879.

Dr. Fox's work is intended, when completed, to comprise "forty-eight colored plates taken from life." Among these will be found all the chief affections of the skin portrayed from typical examples, and, so far as we may judge by the specimens before us, these will be as perfect as the limitations of the photographic method will permit. That this method is suitable for the representation of all diseases of the skin, we cannot concede. There are many gradations of tint which are dependent upon the reflection of light from moist and dry, from rough and smooth surfaces of varying translucency, which it is difficult enough for an artist with a wide range of colors on his pallet to catch. When, however, it is attempted to give expression to these by means of a photograph, it is like playing a tune on one string; we have but two expressions, light and shade, to convey all the gradations of color contained in a great variety of lesions.

As a consequence of this, we find that in those diseases, as elephantiasis, where form is important, the affection is well represented,

while in such affections as eczema vesiculosum or rubrum the photograph fails to give us a clear notion of the characteristic features presented. The pictures thus far published by Dr. Fox are such as can best display the advantages of photography, and we may say that in general they are most admirable. We may call attention in particular to the pre-raphaelite delineation of comedo, where the characteristic coarse, greasy skin of the subjects of this disease is wonderfully depicted. Taken as a whole, these photographic illustrations fill a want, and to the teacher especially must be useful. The letter-press, we may add, is clear and practical.

A. V. H.

ATLAS OF HISTOLOGY. By E. KLEIN, M.D., F.R.S., Lecturer on Histology at St. Bartholomew's Hospital Medical School, and E. NOBLE SMITH, L.R.C.P., M.R.C.S., late House-Surgeon to St. Mary's Hospital. Part IV. Philadelphia, J. B. Lippincott & Co. London, Smith, Elder & Co., 1879. Quarto.

The present part of this atlas treats of bone tissue. Three plates are given, including some twelve distinct pictures, representing sections of bone in various conditions, and with different microscopic amplification. Most of these are colored after the stainings used. The letter-press gives an account of the formation and structure of normal bone.

DISEASES OF THE INTESTINES AND PERITONEUM. By JOHN SYER BRISTOWE, M.D., J. R. WARDELL, M.D., J. W. BEGBIE, M.D., S. O. HABERSHON, M.D., T. B. CURLING, F.R.S., and W. H. RANSOM, M.D. New York, Wm. Wood & Co., 1879. 8vo, pp. 243.

This volume of "Wood's Library of Standard Medical Authors" is taken from the third volume of Reynolds's Practice of Medicine, which, with the authors' names, is a sufficient guarantee of its practical value. The various diseases are treated with a fair degree of fullness, and this book is not among the least valuable of the series to which it belongs.

AN AGREEABLE MEMORIAL.—The committee of arrangements who carried out so admirably all the details of the complimentary dinner recently given to Professor Gross, in commemoration of his fifty-first year in the profession, have issued a memorial volume containing a full report of all the proceedings connected therewith. This has been printed in very handsome style, and prefixed with an admirable and speaking likeness of the Honored Guest. Although primarily intended for those immediately connected with the complimentary dinner, a limited number of extra copies have been struck off for general circulation. These may be obtained at Messrs. Lindsay & Blakiston's; price, \$1.00.

## GLEANINGS FROM EXCHANGES.

### ENORMOUS HYPERTROPHY OF THE MAMMÆ.

—The Proceedings of the Academy of Science of Montpellier contain an account of the following remarkable case. Rosine M., born in 1844, who had not menstruated up to the age of 15, was washing in the river, being, according to the custom of the country, immersed to her waist, when the menstrual flux first appeared. From this time her breasts began to increase in size so rapidly that she was obliged to cease work. When she consulted Dr. Montails the mammæ were so large that they were supported in her lap while sitting. They caused curving of the vertebral column and displacement of the scapulæ. The circumference of the right breast was ninety-four centimetres (thirty-seven inches), that of the left one metre and five centimetres (forty-two inches); the pedicles were smaller. The right breast extended eight centimetres (three and one-fourth inches) below the umbilicus, and the left breast thirteen centimetres (five inches). The hypertrophy was glandular as well as adipose. The girl seemed worn out with the weight of these masses, but refused operative relief. In 1869, at the age of 25, she was married, and from that moment her breasts commenced appreciably to diminish in volume. She has given birth to three children, and in 1876 was pregnant with a fourth. The right breast at that time was twenty-seven centimetres (ten and three-fourth inches) in circumference, the left thirty-three centimetres (thirteen inches). She was healthy and strong. A fuller account will be found in the *St. Louis Medical and Surgical Journal* for May, 1879.

### SUTURAL JUNCTION OF A DIVIDED ULNAR NERVE.

—At a recent meeting of the Clinical Society Mr. Hulke read notes of a case of sutural junction of the ulnar nerve fifteen weeks after its complete severance by a roofing-slate; early restoration of function. The patient, a blacksmith, aged 53, was struck across the inner side and front of elbow by a slate dislodged from a roof. Fifteen weeks afterwards all parts supplied by the ulnar nerve in the hand were numbed and cold, and the scar in front of the elbow was exquisitely tender. The patient was then chloroformed and an Esmarch's bandage put on. The ulnar nerve was exposed at the elbow, and found to be completely divided and the two ends widely separated. The upper end was bulbous and was dragged out of its course by the cicatrix; the lower end was shrivelled. In both ends were minute particles of slate imbedded. Both ends were removed by clean transverse sections, and were then found to be three-quarters of an inch apart. In order to bring them together the upper end was stretched and drawn down, and joined as closely as possible to the lower one by four silk sutures passed through the sheath. Absolute contact



was not obtainable. The operation was done and the wound afterwards dressed antiseptically. The neuralgia ceased at once, and did not recur, and in less than six weeks the patient returned home. Sensation, which had begun to return about a month after the operation, rapidly increased, so that upon leaving the hospital the man went at once to his work. —*Lancet*, May 24, 1879.

**HYDATID OF THE SKIN.**—An example of this rare condition was presented by Dr. G. Schiff to the K. K. Gesellschaft der Aerzte, in Vienna, on the 18th ult. The patient was a man 30 years of age, who for about a year had suffered from scattered roundish movable tumors in different parts of the skin. They varied in size from that of a pea to that of a hazel-nut. They were uniform, presenting no lobulation, and the skin over them was normal. These characters distinguished the tumors from fatty, fibroid, and atheromatous growths. The diagnosis of hydatids had been made by Professor Auspitz, and the examination of one of the tumors, which was excised, proved the opinion of their nature to be correct. The patient had also suffered from muscular tremors and epileptic attacks since an attack of typhus in his tenth year. The same diagnosis was ventured on a second case, but excision of one of the tumors showed them to be fatty. —*Lancet*, May 24, 1879.

**UNUNITED FRACTURE.**—A hypodermic injection of glacial acetic acid (M. v-x) between the ununited ends of the bone is highly recommended by Mr. Fitzgerald, Surgeon to the Melbourne Hospital, in the treatment of *ununited fractures*. At first it is attended by very sharp pain; this rapidly subsides. In this surgeon's hands this treatment has been uniformly successful. —*Hospital Gazette*.  
**"TULLY'S POWDER"** (originally called *Tully's Dover's Powder*).—Sulphate of morphia, one part; camphor, in fine powder, twenty parts; precipitated chalk, twenty parts; powdered liquorice-root, twenty parts. This is the original formula of Dr. Tully, furnished by Mr. Wood, of New Haven.

### MISCELLANY.

THE committee appointed by the London Clinical Society to investigate what deleterious effects follow the prolonged and continuous use of chloral in ordinary doses have not yet reported, and are waiting to collect a larger quantity of information. The report when made will, doubtless, crystallize the nebulous opinions on the subject which have been prevalent, and will present their conclusions in a shape to make them useful to the profession.

LIVERPOOL will not be outdone by London. There plaster of Paris was sold as flour, but at Liverpool one thousand and seven bags of rice-meal have been seized, which were found

by the public analyst to contain fifty per cent. of ground marble, granite, and lime.

**DISEASED PIGS FROM AMERICA AT LIVERPOOL.**—A cargo of pigs which lately arrived in the Mersey from Philadelphia was detained on suspicion that some of the animals were suffering from typhoid. After a veterinary inspection all were ordered to be slaughtered. —*Med. Times and Gazette*, May 31.

The English doctors, at least those living in the country, have recently taken to riding about on bicycles and tricycles to see their patients. These velocipedes are now made with rubber tires, and can travel over tolerably rough roads and up and down steep hills, making from eight to ten miles an hour.

### OFFICIAL LIST

#### OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U. S. ARMY FROM JUNE 29 TO JULY 12, 1879.

MCKEE, J. C., MAJOR AND SURGEON, MEDICAL DIRECTOR. —Leave of absence extended fifteen days. S. O. 74, Department of Arizona, June 25, 1879.

WHITE, C. B., MAJOR AND SURGEON. —When relieved, to proceed to New York City, and, on arrival, report by letter to the Surgeon-General. S. O. 150, c. s., A. G. O.

STERNBERG, GEORGE M., MAJOR AND SURGEON. —Relieved from temporary duty at Washington, D. C., and to report in person to the President of the National Board of Health for duty with the "Havana Commission." S. O. 153, A. G. O., June 30, 1879.

STONROW, S. A., MAJOR AND SURGEON, Fort D. A. Russell, Wyo. T. —The order granting him one month's leave is revoked, and he is granted leave of absence for one month on Surgeon's certificate of disability, with permission to leave the Department. S. O. 54, Department of the Platte, June 25, 1879.

JANEWAY, J. H., MAJOR AND SURGEON. —Assigned to duty, temporarily, as Post-Surgeon at Fort Columbus, N. Y. H., in addition to his duties at Fort Wood. S. O. 105, Department of the East, June 30, 1879.

NOTSON, WILLIAM M., MAJOR AND SURGEON. —Relieved from duty with Army Medical Board, in session in New York City, and assigned to duty as Post-Surgeon at Columbus Barracks, Ohio, relieving Surgeon C. B. White. S. O. 150, c. s., A. G. O.

GIBSON, J. R., MAJOR AND SURGEON. —Granted leave of absence for four months. S. O. 150, A. G. O., June 26, 1879.

CARVALLO, C., CAPTAIN AND ASSISTANT-SURGEON. —Granted leave of absence for six months. S. O. 150, c. s., A. G. O.

KIMBALL, J. P., CAPTAIN AND ASSISTANT-SURGEON. —Relieved from duty at Fort Columbus, N. Y. H., and assigned to duty as Attending-Surgeon at the Headquarters, Military Division of the Atlantic and Department of the East. S. O. 105, c. s., Department of the East.

CLEARY, P. J. A., CAPTAIN AND ASSISTANT-SURGEON. —Granted leave of absence for five months. S. O. 157, A. G. O., July 7, 1879.

MUNN, C. E., CAPTAIN AND ASSISTANT-SURGEON. —Granted leave of absence for four months. S. O. 159, A. G. O., July 9, 1879.

PAULDING, H. O., FIRST-LIEUTENANT AND ASSISTANT-SURGEON. —Now awaiting orders at Washington, D. C. Assigned to temporary duty at Fort McHenry, Md., relieving Assistant-Surgeon W. B. Brewster. S. O. 160, A. G. O., July 10, 1879.

BREWSTER, W. B., FIRST-LIEUTENANT AND ASSISTANT-SURGEON. —When relieved, to report by letter to the Surgeon-General. S. O. 160, c. s., A. G. O.

DRS. JOHN J. KANE, J. M. BANISTER, WILLIAM B. BREWSTER, AARON H. APPEL, CHARLES RICHARD, and W. F. CARTER, having been found qualified by the Army Medical Board, in session in New York City, have been appointed Assistant-Surgeons U. S. Army, with the rank of First-Lieutenant, to date from June 3, 1879.